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BLUE JAY

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EDITOR'S MESSAGE

Let me share with you some of the rewards and frustrations of being an editor. I was able to send the March issue to the publisher ahead of schedule as all the authors, reviewers and assistant editors worked very hard to get material back to me on or before time. It only remained to insert Wayne Harris's Christmas Birds Counts. These were delayed slightly by printer problems, but only by a few days. Then the wheels came off the wagon. The courier lost the galley proofs for a week. Although I reviewed and edited them in two days, the delay had thrown off the publisher's schedule. Despite this they were sent as rapidly as possible to the printer, who promptly suffered a mechanical breakdown. This meant a delay in getting repairs and a delay in developing a new schedule. I really believed that the March issue was going to be mailed in March. This, the June issue, will also go to the publisher on time. We can only hope that we have paid our dues and all will go well. I have learnt, however, not to make promises.

I have mentioned before the help I have received in putting this journal together. I plan to bring a number of people to your attention in coming issues. I will start with two stalwarts of the society: Stuart Houston and Frank Roy. Stuart has been my advisor in the business of getting the magazine out. If you look through the last few issues he was also a major contributor of articles. Without him your magazine would have been rather thin. Because I was able to bring the publication back on track, both in time and quality, using Stuart's material, others are now encouraged to send in articles.

Frank has been my guide for tone, quality of work and quality of English. Despite some other, very heavy demands on his time, Frank has always provided the support needed. Notwithstanding his time constraints, Frank's reviews are sensitive, thorough and accurate. We all learn from his input.

So if there are frustrations, there are rewards too. I mention Stuart and Frank initially because they were the first to rush to my aid. You will be hearing about others in future issues.

Editor's note

In *Blue Jay* 54:160 there was a review of *Whooping Crane* by Ernie Kuyt. Two sentences were dropped from the text and Ernie would like to have these reinserted. Line four of paragraph two should read; "Mr. Pratt, a long time and highly respected executive member *of WCCA, who for as long as I can remember, has nobly carried out the lion's share of WCCA duties, has been involved in* aviculture since childhood..." and line five of paragraph eleven should read; "... Swan to a stable population,' '*as every crane man knows, cranes raised by captive methods are worthless as wild birds*'... " This should further clarify the intent of the review.

In *Blue Jay* 55:30 top line of the first column should read "half-century earlier" not half-century later, and in line 4 insert "1773" after 12 May.

Please read the appeal to photographers on page 122.

Sincerely,

Roy D. John

BIRDS

SOME INTERACTIONS BETWEEN PILEATED WOODPECKERS AND NORTHERN HAWK OWLS

ROBERT W. NERO, Wildlife Branch, Box 24 - 200 Saulteaux Crescent,
Winnipeg, MB R3J 3W3, and HERBERT W.R. COPLAND, Manitoba
Museum of Man and Nature, 190 Rupert Avenue, Winnipeg, MB R3B 0N2

In the winter of 1991-92, Northern Hawk Owls appeared in large numbers in southern Manitoba. Between 1 December 1991 and 11 April 1992, we captured and banded 76; another 60 were banded by Jim and Patsy Duncan. We found as many as 23 Hawk Owls in one day (29 February 1992) and were so busy that there was little time to observe their behaviour. Two brief episodes involving Pileated Woodpeckers, however, caught our attention.

On 9 February 1992, in mid-morning on the Fort Alexander Indian Reserve (Sagkeeng First Nation), on the north side of the Winnipeg River, we found an owl perched on the topmost branch of a tree about 150 m from the road. The tree was at the far end of a row of aspens along a small ravine. Since Hawk Owls sometimes will respond to a lure from as far away as they can be identified, we proceeded to try and coax this bird to come to us. After several minutes, we saw a Pileated Woodpecker fly about 200 m from a wood on the opposite side of the road straight to the trunk of the tree and some distance below the owl. At once, the owl dropped off its perch and landed near the woodpecker, whereupon the latter flew to another position on the same tree. Twice more the owl darted at the woodpecker, which each time changed position on the tree. Finally, the woodpecker flew off in the direction from which it had first come, leaving the owl now perched low and close to the trunk of the tree. After several minutes, the owl returned to its original treetop position. Upon capturing the owl, we determined it to be a juvenile.

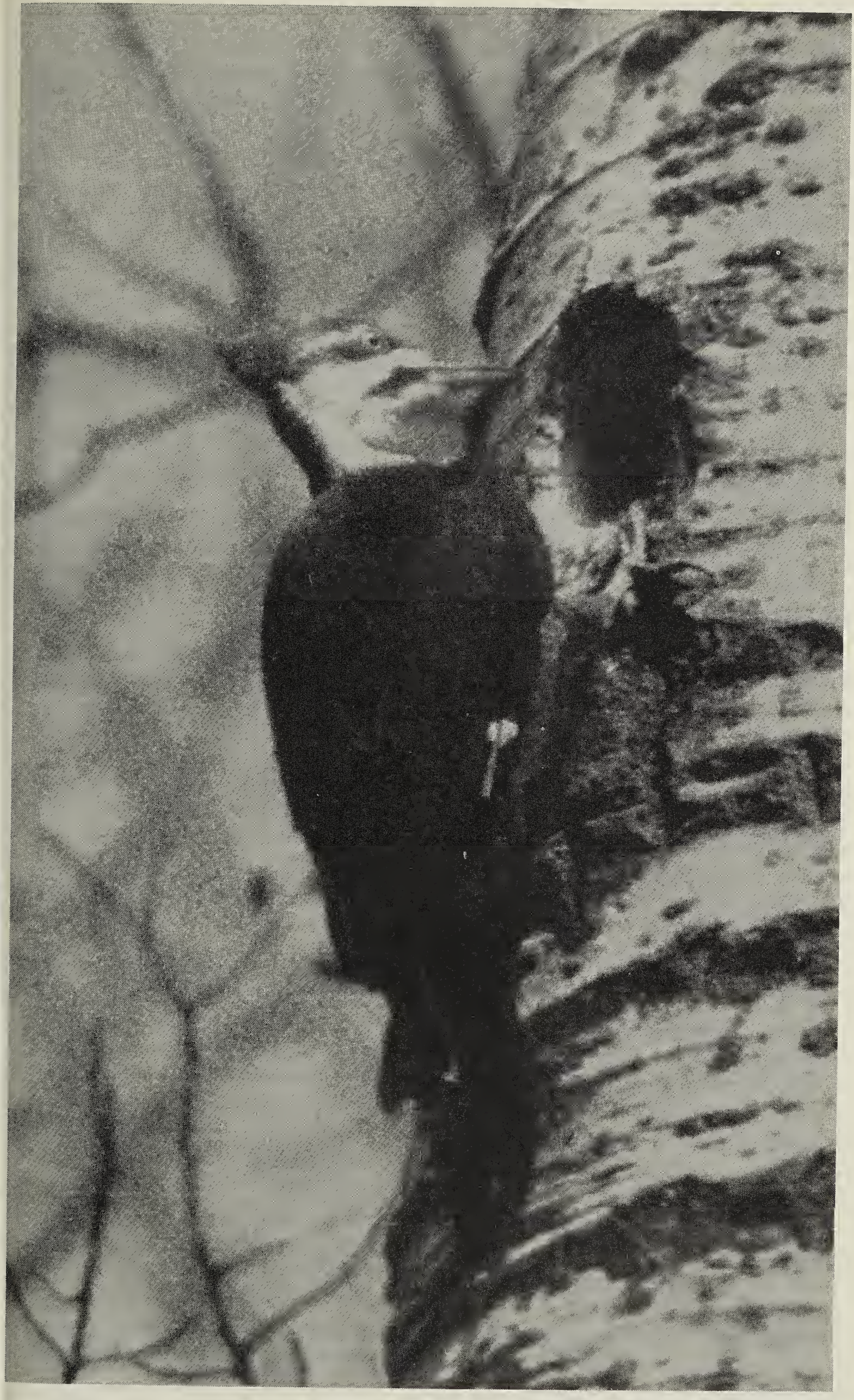
In the winter of 1993-94, Hawk Owls were scarce in southern Manitoba; only five records came to our attention. A week after banding another juvenile owl at Ft. Alexander I.R. (just 9 km west of the above 1992 site), we saw another encounter with a Pileated Woodpecker. This was at noon on 5 March 1994. We were parked on the side of the road watching the owl, which was on a hydro pole. The owl flew across the road to a large spruce tree in front of a house, then dropped down and captured what we presumed was a vole; with the melting snow at this time, vole signs were conspicuous. The owl flew with its prey across the road and straight back a few hundred metres to the edge of a wood, returning almost at once to perch on a hydro pole. Thinking that the owl might have visited a nest site, we walked back to the trees to check. While we were looking at an old woodpecker nest hole in a dead aspen, we heard a faint chirping sound,

Hawk Owl *Wayne Lynch*

remindful of the scolding notes of an American Robin. Shortly, we realized that the sound was coming from behind us. We turned to see that, back at the road, the Hawk Owl, still on top of a hydro pole, was being harassed by a Pileated Woodpecker.

As we hurried back for a closer look at the action, we saw the woodpecker fly around the owl, about 5-6 m away and at the same level. Twice, the owl dived off its perch and flapped about in a circular manner, apparently aroused by its assailant, then flew to the next pole. Several times we could hear the excited chirping sound, but at our distance we couldn't be sure which bird was giving it. It was loudest when the woodpecker was circling the owl, and it sounded a little like a Northern Flicker's call. Bent notes that when the Pileated Woodpecker "is in flight a slowly uttered *puck*, *puck* may sometimes be heard."[2] Whether that could be the sound we heard is uncertain, but, according to the Duncans, alarm calls of Northern Hawk Owls are much different.[5] When we were close enough to see that the woodpecker's crest was raised, the woodpecker once more circled about the owl, which had flown to the top of a third pole. The woodpecker then flew across the road to perch close to the top of a pole near the house (where earlier the owl had captured prey) before flying off into nearby woods.

It is possible that the woodpecker had laid some claim to a large mass of flesh and fat that we noticed on a bird feeder in the yard of that house. This could be one reason for the woodpecker's obvious belligerence. Of course, any owl is likely to be mobbed by other birds. A Hawk Owl that over-wintered in Winnipeg (1993-94) occasionally attracted the attention of Black-capped Chickadees, Common Redpolls and a Hairy Woodpecker.[6] The Northern Hawk Owl is capable of taking even large avian prey, for example, ptarmigan



Pileated Woodpecker *G.J. Smith*

and Spruce Grouse.[4] Thus, the boldness of birds that harass this species is perhaps surprising.

After a juvenile Hawk Owl was banded and released by the Duncans south of The Pas, 10 March 1992, it was mobbed by four Gray Jays, then a Pileated Woodpecker flew in, landing 2 m below the owl. With head plumage erected, the woodpecker climbed upwards within centimetres of the unresponsive owl before flying away. And in late winter 1991-92 at McMunn, the Duncans noted that when a Hawk Owl flew to a large, isolated Manitoba maple, a Pileated Woodpecker flew in, head feathers erect, "uttering loud raucous calls." The woodpecker, which appeared to be "intensely agitated," made several passes, coming within .3 to .6 m of the seemingly unconcerned owl. These observations suggest that Hawk Owls are not much bothered by presumed threat displays given by Pileated Woodpeckers. In contrast, on 7 March 1992, on PTH 8 west of the causeway to Hecla Island, we saw a Hawk Owl give an aggressive response to a Common Raven that landed on the top of a tree about 50 m away. The owl fanned its tail and squawked loudly.

Perhaps the Pileated Woodpeckers in the above observations were acting aggressively towards a potential nest site usurper. Hawk Owls are known to use woodpecker cavities for nesting and roosting, especially those of the Pileated Woodpecker, which makes the largest holes.[1,2,7] Voous, in a substantial report on the Holarctic Northern Hawk Owl, notes: "Its interspecific relations with ... woodpeckers which provide the owl with nest holes, are subjects requiring detailed study, as is its life in winter."[7] In Nebraska, on 26 March 1991, a female Pileated Woodpecker came out of hiding in response to a taped call of an Eastern Screech Owl, another cavity nester.[8] Wright notes: "While I urge caution in the use of tapes of any kind, our unexpected success with this technique may be of use to other birders in search of Nebraska's most elusive woodpecker."[8] Bolles,[3] quoted by Bent, tells how a Pileated Woodpecker, upon seeing a tame Barred Owl (another hole nester) outdoors, began vigorously flying at the owl while giving a "shrieking cackle," making the owl "unhappy for some time by his discordant cries and frequent flights and counter flights."[1]

Acknowledgements. We are grateful to James R. Duncan and Patricia A. Duncan for allowing us the use of their observations, and for their comments on this report. Paul A. Johnsgard kindly forwarded a copy of the Wright article. For typing assistance, we thank Gordon G. Graham.

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OPERATING A NESTBOX LINE — A 13 YEAR SUMMARY

BILL ANAKA, Box 211, Yorkton, SK S3N 2V7

Nestbox lines are becoming a common sight along roads in western Canada. Most, if not all, of these lines are intended to increase the number of Mountain and Eastern Bluebirds, two species that suffer from loss of habitat and competition for limited nest sites. Close observation of many lines reveals a low percentage of bluebird occupancy for a number of reasons: poor habitat, competition with Tree Swallows, House Sparrows and other species, poor box design and little or no maintenance.

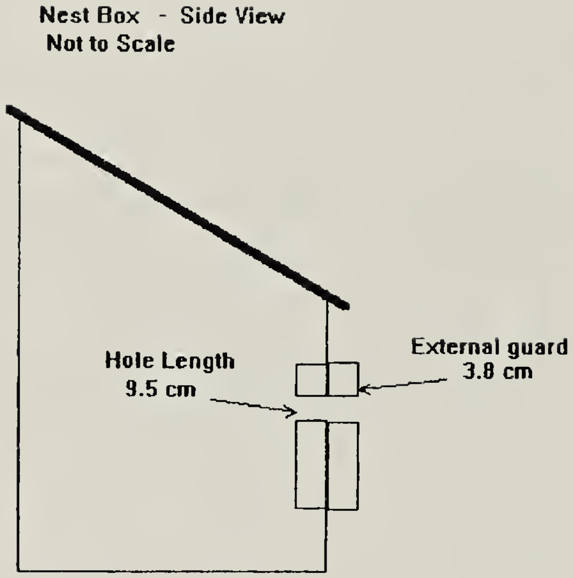
My wife Joyce and I for several years monitored a 50-km line from Yorkton, SK to Good Spirit Lake Provincial Park (GSLPP) with very low bluebird occupancy. All but the last six km near the lake ran through cultivated land with numerous farmyards. Most nestboxes were occupied by Tree Swallows or House Sparrows.

C. Stuart Houston of Saskatoon mentioned that ideal bluebird habitat was well-grazed pasture. With that in mind, we started a new nestbox line in the Good Spirit Community Pasture (GSCP), operated by Saskatchewan Rural Development (SRD). This pasture is located along the west boundary of GSLPP. It consists of 26 sections of land (approx. 6700 hectares). The topography is slightly rolling with wooded bluffs and a number of seasonal creeks with associated willow growth. The pasture is bisected by provincial highway #47.

Methods. Starting in 1984, 30 nestboxes were placed along the highway through the pasture at distances of 300-400 m apart. Ten more boxes were added in 1985. All the boxes in both years were occupied by Tree Swallows. The breakthrough came in 1986 when two Mountain Bluebird nests fledged a total of 11 young. In

Table 1. GSCP NESTBOX LINE — A 13-YEAR SUMMARY: LINE SIZE AND BLUEBIRD OCCUPANCY

Year	# Sites	# Sites with Second Box	# Occupied Boxes	% Boxes from Occupied Site
1984	30	0	0	0
1985	40	0	0	0
1986	40	0	2	5
1987	40	0	4	10
1988	41	7	9	22
1989	41	41	32	78
1990	52	51	36	69
1991	85	81	70	82
1992	103	103	91	88
1993	103	103	92	89
1994	103	103	98	95
1995	103	103	96	93
1995	108	108	99	92



Nesting box designed by Ron Bittner.

1987 bluebirds occupied four nestboxes. During monitoring it was apparent there was conflict between bluebirds and swallows with the latter usually succeeding. Starting in 1988 a second box was added at sites with active bluebird nests (another good suggestion from Stuart Houston). In the following year, when all sites had a second box added, bluebird occupancy rose significantly. More sites were added in succeeding years to the present number of 108 (Table 1). Every driveable side road and crossroad in the pasture was used and the line was extended to privately owned pasture land bordering the community pasture. Total trail length increased to 54 km, but the distance between the extreme ends of the trail is only 21 km. The two boxes at each site are located one pasture fence post (6 m) apart.

The nestboxes were all of the standard design used for many years.[1] Detailed standard box plans with dimensions specifically for Mountain Bluebirds were published by Pearman and Shantz.[4,5]

Monitoring of the line begins in mid-May and ends after the last brood fledges in mid- to late August. The trail is monitored weekly. After the initial trip, individual sites are checked frequently enough to record the complete egg clutch, progress of the young and the number of young within one week of fledging. All early nests are checked for renests. The number of visits to an individual nest during a season range from five to eight, depending on nest contents and whether there is a renest attempt.

Young birds are aged to determine the time for the next visit. Originally we used three broad age groups: “N” denoted newly hatched, naked young, “P” pin or partly feathered and “F” fully feathered young. In 1995 a more age-specific method was initiated. Referring to the series of excellent colour photographs of nestlings in Bryan R. Shantz’s book, all young are aged as to number of days since hatching.[5] This determines the timing of all subsequent visits.

In 1996 we kept track of our monitoring efforts. From 21 May to 31 August we made 15 trips, totalling 996 km and 72 hours. The line starts 6 km from home. Individual trips range from four to seven hours.

Problems. A major predator problem developed in 1991. Raccoons discovered an easy meal in every active nestbox. During the renest period (late June to mid-July) in 1991 raccoons destroyed 20 bluebird nests and an equal number of swallow nests. In one instance a raccoon raided every nestbox for a distance of 5 km. Raccoon predation at a nest is readily identified by scratches on the box exterior, disturbed nest contents and bluebird wing and tail feathers on the ground beneath the nest. In conversation with Louise Horstman and Ted Code, coordinators of the Prairie Nestbox Monitoring Program, they mentioned that Ronald A. Bittner of Abernethy, SK had developed a box style that was relatively raccoon proof. Ron provided plans for the box (Plan A).[3] This box used internal and external predator guards. The guards are 3.8 cm wide (standard 2" x 4" construction material). The internal guard is the width of the box, with the inner surface tapered. The external guard is attached to front of the box and, in effect, becomes an extension of the entrance hole. With both guards in place the thickness of the front wall increases to 9.5 cm. The guards (as per the Plan A box) were added to all the standard boxes. As well contact with Myrna Pearman at the Ellis Bird Farm, Lacombe, AB resulted in the discovery of another raccoon resistant box, the Shantz box.[5] We have also added Ron Bittner's Plan B box and a modified version of the Peterson box.[2,3] We now have 25 boxes of each of the four styles located at random along the line, with one standard and one experimental box at each site. To date, bluebirds have shown a preference for the experimental boxes. Most important, raccoon predation is no longer a problem.

Other predators and conflict with other species are minor factors on our line. With the area largely uninhabited, House Sparrows are not a problem. European Starlings, although present, average less than one nest per year. (**Editor's note:** *The author uses a 1.75 inch hole, considerably larger than the recommended 1.5 inch. A Starling has difficulty with holes smaller than 1.6 inch, while 1.5 inch is about the lower limit for the Mountain Bluebird and is ideal for the Eastern Bluebird. Anaka tried 1.5 inch holes alongside 1.75 inch and discovered that bluebirds chose the larger holes twice as often as the smaller ones. As he has few problems with Starlings he now uses the larger hole on all boxes.*) With frequent monitoring we know the ages of the young so we can prevent premature attempts at fledging by avoiding those boxes. Deer mice will occupy a nestbox over winter and at times will still be present at nesting time. A pre-season check of sites subject to mouse presence controls the problem. Deer mouse presence is a greater problem for the bander than for the birds. Precautions include using a mask and dust control while cleaning the boxes.

Theft and vandalism are a reality on any nestbox line, particularly when the area is uninhabited. Every year several boxes disappear. Usually only one box at a site is removed, inevitably the newer one. Vandalism is less frequent; one or two boxes a year are the victims of target practice by frustrated hunters in the fall after nesting season is over.

Results. Adding a second box at each site eliminated the swallow conflict and bluebird production increased accordingly (Table 2). Occupancy by bluebirds of one box at each site remains at over 90%. Modifying standard boxes and incorporating new box designs controlled the raccoon problem. The number of young fledged annually ranges from 500 to 600 plus. The major factor influencing this variation is weather, particularly at fledging and renest time. Prolonged cold, wet conditions in late June and early July result in the loss of one or more young in some nests and a marked decrease in the number of renests. 1996 was

Table 2. GSCP — NUMBER OF BLUEBIRDS FLEDGED

Year	Early and First Nests			Late and Renests			Total — All Nests		
	# of Nests	# of Fledg.	Av. # Fledg.	# of Nests	# of Fledg.	Av. # Fledg.	# of Nests	# of Fledg.	Av. # Fledg.
1984	0			0			0		
1985	0			0			0		
1986	2	11	5.5	0			2	11	5.5
1987	4	20	5.0	1	6	6.0	5	26	5.2
1988	9	44	4.9	2	8	4.0	11	52	4.7
1989	29	130	4.5	18	56	3.1	47	186	4.0
1990	32	156	4.9	18	52	2.9	50	208	4.2
1991	68	323	4.8	46	100	2.2	114	423	3.7
1992	82	348	4.4	61	202	3.3	143	550	3.8
1993	82	381	4.6	39	115	2.9	121	496	4.1
1994	87	380	4.4	48	146	3.0	135	526	3.9
1995	83	406	4.9	63	167	2.6	146	573	3.9
1996	99	461	4.6	56	216	3.9	155	677	4.4
Total	577	2,660	4.6	352	1,068	3.0	929	3,728	4.0

Early nest denotes a nest with at least one egg laid by 31 May. Late nest denotes a nest with the first egg laid 1 June or later. Renest denotes a second nest at the same site.

Early/first nests and late/renests are combined in the table — there is a difference of only 0.1 or 0.2 in the number of young fledged in the respective categories.

an ideal nesting season with no weather-related problems. A total number of 677 young fledged reflects this.

Included in the bluebird totals are several Eastern Bluebird nests. This species is not a regular resident. Since the start of the line in 1984 Eastern Bluebird nests have been recorded in five years. The total of 11 nests, including three renests, fledged 42 young.

We do not monitor Tree Swallow nests as frequently as the bluebird nests. This is mostly due to time constraints. Nests are checked for occupancy and later for presence of young. Approximate success is determined at cleaning time. The total number of nests and young fledged equals or exceeds the bluebird totals. An exception occurred in 1993 when prolonged cold, wet conditions in early July resulted in the loss of 30 swallow nests.

Discussion. We established the Good Spirit Community Pasture trail for the purpose of increasing the bluebird population in an area with good habitat but a lack of natural nest sites. It is a learning experience. Along the way we encountered problems: competition from Tree Swallows and predation by raccoons. These problems were overcome with the assistance and advice of a number of people. In retrospect, and despite setbacks, the trail is a success. The fledging of over 3,700 bluebirds in the last 11 years attests to that.

There are 56 community pastures managed by SRD in Saskatchewan along with 57 Prairie Farm Rehabilitation Administration (PFRA) pastures. Many provide excellent bluebird habitat and the potential for almost unlimited nestbox lines.

An enjoyable side benefit of monitoring in a community pasture area is seeing other species of wildlife and numerous wildflowers that fill every ditch and extend out into many of the

Mountain Bluebird *Andrius Valadka*

fields. The large herds of cattle and the absence of cultivated fields add to the overall impression of a much earlier period in time before the advent of homesteads and intense human activity.

Acknowledgements. Although the operation of the nestbox line is primarily a two-person endeavour, the assistance of numerous individuals is appreciated. Thanks to C. Stuart Houston, Ronald Bittner, Myrna Pearman, Louise Horstman and Ted Code for their suggestions, references and nestbox plans. Thanks also to management and staff of the Good Spirit Community Pasture, to private land owners for the use of their fences for nestbox erection and to Julia Wiwchar, a very capable assistant on many of our monitoring trips. Also thanks to an anonymous reviewer who critiqued the first draft of this paper and offered helpful suggestions.

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* * *

The term godwit (Hudsonian and Marbled Godwits) comes from the Old English *god wiht* meaning good creature — presumably because they are good eating.

*****

Lead shot embedded in a bird's flesh does not cause poisoning. It is shot mistakenly picked up as seed and digested that leads to its death.

SASKATCHEWAN BIRD SPECIES WHICH INCREASED WITH SETTLEMENT

C. STUART HOUSTON and MARY I. HOUSTON, 863 University Drive,
Saskatoon, SK S7N 0J8

In the September 1944 issue of the *Blue Jay*, editor Isabel M. Priestly asked on behalf of the United States Fish & Wildlife Service for information on Mourning Dove numbers, which appeared to be dropping in the United States. Her own observations were contrary to the trend south of the border, for Mourning Doves had become more common around Yorkton between the 1920s and 1944. In the December 1944 issue, the final one she edited (with her obituary notice added in at the time of mailing), she quoted Maurice Street as saying: "Mourning Doves have probably increased more in the Nipawin district than any other species with the exception of the Barn Swallow."

If the Barn Swallow increased the most, and the Mourning Dove increased second most, we may ask which other Saskatchewan species have adapted well to farms and towns and have increased in numbers. In attempting to answer this question we shall review the evidence, often scattered and fragmentary, for seven species which seem to have thrived with human presence: Mourning Dove, Tree Swallow, Barn Swallow, American Crow, Mountain Bluebird, American Robin, Red-winged Blackbird.

Five of the seven species, the Mourning Dove, Tree Swallow, Barn Swallow, American Crow and Mountain Bluebird, were initially quite rare across the southern prairies. The dove and crow have increased because more food is available around farms than in unsettled prairie, and aspen bluffs now provide nest sites. Both the Tree Swallow and Mountain Bluebird are nest-site dependent and have responded to the widespread appearance of bird boxes on fence posts. The Barn Swallow found suitable nesting sites as soon as farms and buildings appeared. The American Robin had few nest sites on the treeless plains, regularly swept by prairie fires, but increased as trees grew up, particularly on farmsteads and in towns and villages. The Red-winged Blackbird was always common, so it is difficult to ascertain whether its numbers rose in the present century, but presumably they did in response to increased food supplies on its wintering grounds in the southern United States. Although evidence for all these species is largely anecdotal, rarely numerical and occasionally conflicting, we think general conclusions can nonetheless be reached.

In addition to the seven species which we discuss in detail, major population increases have been experienced by the Western Kingbird, which spread across the plains only after trees grew to 6 m in height and by the Black-billed Magpie, which returned after its range had been reduced to the Cypress Hills coincident with the disappearance of the bison. Changes in the range and numbers of these two species have been published previously.[18,20]

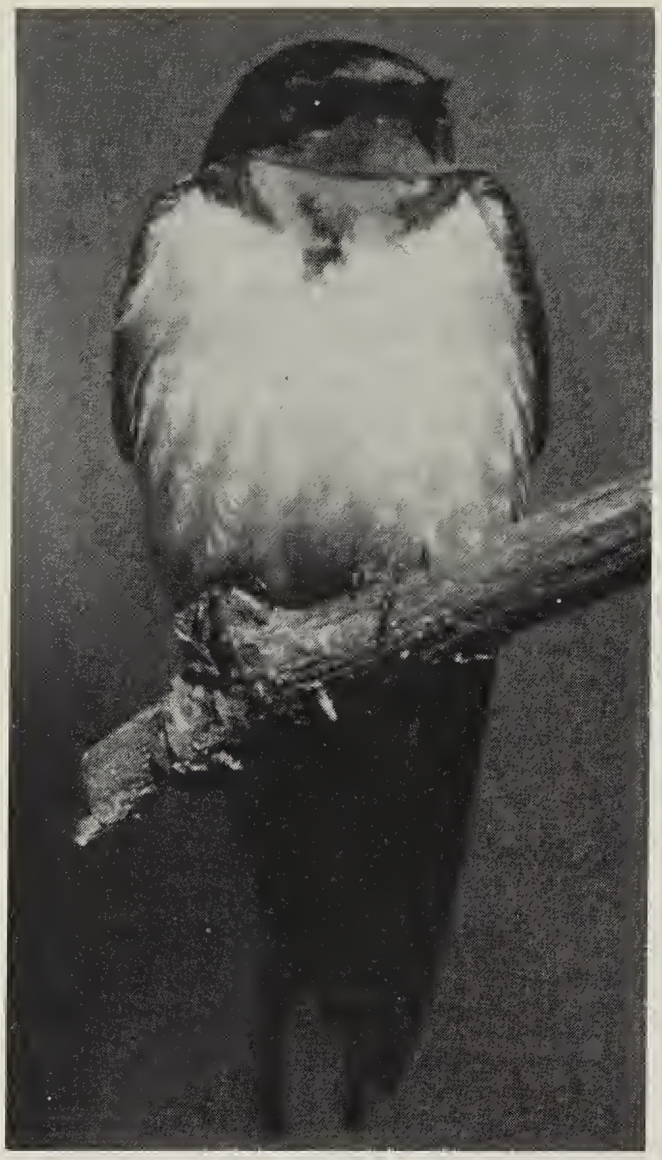
All localities mentioned are within Saskatchewan, unless specified.

Mourning Dove The Mourning Dove, initially restricted to river valleys, was already present at Fort Qu'Appelle in 1885.[39] Macoun observed in 1894 that the river valley at Medicine Hat [Alberta] was the only site at which it was numerous between Manitoba and the Rocky Mountains.[26] Its increase and spread are well documented.[21,25,37] At Nipawin this was the second-most-rapidly increasing species, having been quite rare until about 1935.[38] It increased noticeably at Somme between 1972 and 1992.[15]

Tree Swallow Coues found no Tree Swallows west of Pembina in 1873 and 1874[6] and this species remained rare when settlers arrived on open prairie. At Crane Lake, on 3 June 1893, Raine noted that "Several Tree Swallows had nests in holes in the largest decayed trees in the bluff, so I collected a few clutches."[34] In 1894, Spreadborough saw only two at Crane Lake.[26] In 1932, Todd, in the Elbow-Davidson area, said "Tree Swallows were confined to the vicinity of houses and tree-growth." The only nest Todd located was in a telephone pole north of Raymore.[40] As late as 1948, Godfrey's National Museum of Canada collecting party of four had only a single sighting at Maple Creek, 4 June-14 July.[11] In striking contrast, Tree Swallows were always present in parkland areas north of Fort Carlton. In the 1820s Richardson reported that "this neat and handsome swallow frequents the woody districts up to the sixtieth parallel, making its nest in hollow trees, of dry grass and feathers."[22] Yet, as late as 1939, it was rarely seen at Emma Lake, where a single pair nested in a bird box.[28]

On the plains, settlement brought more trees, telephone poles and fence posts with holes dug by Northern Flickers, as well as mail boxes, twine boxes on binders, and crevices in buildings. These made excellent nesting sites for the Tree Swallow; its numbers increased rapidly.[23] Smith summarized this well: "Formerly a transient over much of the southern plains, it has recently established itself as a breeding bird in many districts. Its expansion has been aided by humans through the quelling of prairie fires, which has allowed for southward spread of aspen bluffs. Tree Swallows in all settled regions have also benefitted by the provision of nest boxes."[37]

Barn Swallow John Richardson found it "Common [in] summer ... North to 68°; migratory ... In the fur-countries, where the habitations of man are few and far between, it inhabits caves, particularly in the limestone rocks; and it also frequents the outhouses at the trading-posts."[22] Across the Northern Great Plains, buildings were few and far between for a century and a half. Two references show that the Barn Swallow was absent or rare in northern North Dakota and Montana, just south of the 49th parallel. In 1869, J.G. Cooper reported: "I saw no sign of its nests about the trading posts [Fort Union] where the Cliff Swallow has full possession of every available position for a nest."[5] Coues, in 1873, listed it as a "very rare summer resident along the Mouse [Souris] River and various other points along the line," noting that "eligible breeding-places ... being few and far between ... it is correspondingly uncommon."[6] Coues found one small colony nesting on a cutbank on a small stream west of the Sweetgrass Hills in northern Montana in 1874.[6] Similarly it was absent or rare in Manitoba.



Barn Swallow *Wayne Lynch*

Hine, at Winnipeg, Manitoba, listed it as an "accidental visitant; rare," and Nash said it "does not occur near Portage la Prairie or Winnipeg."[39] Seton himself said it was merely a "rare spring visitant" at Carberry, 1882."[39] Guernsey, at Fort Qu'Appelle, noted it as a "Summer resident; breeds; arrives about May 20"[39] but it seems to have been uncommon there if none were seen until 20 May.

After buildings and bridges were erected along the new railway, it took up to ten years for Barn Swallows to adapt to these structures. At Rush Lake, Walter Raine found a nest attached to a cowshed on 25 May 1893,[34] and by 1894 Spreadborough noted "many pairs ... breeding in the farm buildings at Crane Lake."[26] At Calgary, Alberta in 1895, J.E. Houseman reported: "Barn Swallows are scarce. I found only one nest ... underneath a small bridge."[16] When Frank Baines settled west of Saltcoats in 1883, there were no Barn Swallows; they did not appear until about 1900.[17] By 1905-06 this species was "fairly common about the ranches" near Maple Creek.[2] Several pairs were nesting under a bridge at Quill Lake in 1909.[10] Near Camrose, Alberta, as late as 1931, Frank Farley had never seen more than five together![9]

Not one was seen by Congdon in the Prince Albert-Kinistino-Wakaw area in 1902,[4] nor at Sheho until a pair nested in a deserted house about 1917.[31] Even as late as 1922, only one was seen at Last Mountain and Old Wives lakes, by C.G. Harrold.[14] As noted above, it "increased immensely" at Nipawin between 1930 and 1943. It first appeared in the Somme area about 1940.[15] Furniss found it a scarce summer resident and found no nests near Prince Albert, 1920-1943.[22] In 1932 Todd found only "a few" at Davidson and Last Mountain Lake.[40] Now Roy says, "with the possible exception of the House Sparrow and robin ... they are the best known bird in farmyard and village."[35] What a change this represents!

American Crow The dramatic increase of this species, which surely must rank in the top three, has been covered in an earlier paper.[18] We wish to corroborate those observations by demonstrating that the same increase took place in Manitoba and Alberta.

Hamilton Laing's father "told him that in 1870 only a few crows had hung around the first Kildonan Scotch settlement [north of Winnipeg, Manitoba] where the grainfields attracted them. With the development of the Clearsprings settlement [near present Steinbach] and the Mennonite fields westward, the crow soon took possession of the country."[25] B.J. Hales made similar observations 160 km farther west at Brandon: "Before the settlement of the prairies crows were not plentiful. ... the early settlers all agree that crows were formerly scarce on the prairie. With the coming of man his food supply increased, and the crow increased in numbers out of all proportion to other birds."[13]

At Camrose, Alberta, Frank L. Farley made similar observations concerning "the extraordinary increase in the number of crows. In 1892, the year of my arrival in Alberta, I did not record a single crow ... Only the odd pair was seen during the next few years, and it was not until the beginning of the present century that their numbers showed any material increase. By 1910 there were evidences that crows would shortly become a menace to our water-fowl ... The increase has been phenomenal."[9]

Mountain Bluebird This species was rare, even in migration, prior to settlement. Not one was seen by Richardson or Drummond on the North Saskatchewan River in the 1820s, by Blakiston in 1858, or by R.R. MacFarlane at Cumberland House in 1890.[22] John Macoun saw his first on his early western trips beginning in 1872, but not until 1895 did he find nests in the badlands south of Wood Mountain on 14 June, and Frenchman River, 21 June.[19,26] The first Manitoba record was 8 October 1896, when two were seen near Brandon and one was collected by E.H. Patterson.[1] At about the same time Norman Criddle found them nesting in hollow oak stumps in the Carberry sandhills southeast of Brandon, although as late as 1904 not a single migrant had been seen at the Criddle farm itself, near Treesbank. Mountain Bluebirds began nesting there about 1912 and replaced the Eastern Bluebird by 1925.[7,8] In Saskatchewan, even in the favourable habitat of the Cypress Hills, Mountain Bluebirds were still uncommon when Laurence Potter arrived to ranch there in 1901, though they increased perceptibly between 1911 and 1923.[33]

By 1923 Mountain Bluebirds had spread as far east as Regina and as far north as Edam.[27] They did not reach Saltcoats and Yorkton until 1930,[17] Dafoe in 1932 (Todd's only sighting in the Simpson-Davidson-Elbow area),[40] and Sheho, even in migration, until 1938.[31] At Nipawin, Street's first sighting was 8 May 1932, and his first nesting[25] May 1939. By 1958, 14 nests were known and another 11 not confirmed at Nipawin.[22] In the Qu'Appelle Valley, Callin said they "were regular and fairly common only since the 1940s."[3]

Mountain Bluebirds continue to nest in natural cavities on badland cliff faces in river valleys of southern Saskatchewan and Alberta, but the greater part of their population now use artificial nestboxes.

American Robin Macoun, though finding the American Robin common at most sites, nevertheless said "It is essentially a bird of civilization."[26] There is some evidence that this species increased in numbers on the formerly open plains as domestic trees slowly grew in villages and on farms. At Pembina, North Dakota, Coues found it "in abundance ... breeding in the wooded river-bottom" but said that "Further westward the species seems to occur chiefly during the migrations, as most of the

American Robin *Wayne Lynch*

country is unsuited to its wants."[6] Walter Raine saw a robin on 8 June 1893 at the foot of Tunnel Mountain at Banff, forgetting for the moment the one nest he had found at Moose Jaw on 7 June 1891, and remarked that it was a species "I never saw in Assiniboia."[34] During a collecting trip in southern Saskatchewan, 26 April-29 May 1922, only one pair was seen by C.G. Harrold, in a village 16 km from Old Wives Lake.[14] At Camrose, Alberta, Farley was one of the few who documented the widespread increase in numbers: "Robins are much more plentiful now than they were when the country was first settled. During the entire summer of 1892 I did not see as many robins as I now see in a single day. It appears to enjoy the association of man."[9] At Sheho, the robin became common and "semi-domesticated" with settlement.[34] It began nesting on the Belcher farm south of Dilke only about 1948, twenty years after planting of the farm shelterbelt. In 1982, Ann Jeffries reported from near Otter Lake an example of robins moving in to take advantage of new habitat when a garden was carved out of the northern forest.[24] Since trees have grown up in every city, town and village in Saskatchewan, the robin is now highly visible and audible to all.

Red-winged Blackbird In 1984 Nero reported that the Red-winged Blackbird was "probably the most abundant bird species in North America."[30] This probably was not true one or two centuries earlier, but surprisingly little documentation is available to tell when or even if big increases occurred. The arrival dates given for Fort Carlton in the 1820s, "beginning of May" by Richardson and 4 May 1858 by Blakiston, is suggestive but inconclusive evidence for smaller populations then than now.[22] In 1873, Coues reported it was "certainly not a conspicuous feature of the region" along the 49th parallel, west of the Red River, noting that it was the least common blackbird.[6] In 1893, Seton reported that it had "increased remarkably within the last ten years."[36] It was already common in the Qu'Appelle Valley, in 1885 to 1895, or as Arnold claimed, in "countless numbers."[3] Absent on the north shore of Lake Athabasca in 1920, it was common there in 1960.[29] Its increase in Texas dated "Since rice growing became important on the upper Texas coast beginning in the early years of the twentieth century..."[32] As another bit of evidence that this increase was continent-wide, Graber and Graber reported that the population density increased greatly in the Midwest during the first half of the twentieth century.[12]

Other species, resident in parkland, spread south to occupy the farm shelter belts and the aspen bluffs as they appeared in fields. The increase in numbers of these species was simply an adaptation to availability of trees. The Chipping Sparrow was "quite rare" in southern Manitoba[39] and "uncommon" near Camrose, Alberta;[9] it took longer than most other species to accommodate to trees and did not appear at the Beckie farm at Bladworth until the 1960s.[35] The Baltimore Oriole similarly took advantage of appropriate habitat unavailable when the plains were almost treeless, and today, on the previously open plains, it is "one of the most characteristic and welcome birds of village and farmstead."[35] The Common Grackle, as Roy says, "is now almost exclusively identified with human habitation, most of them nesting in towns and villages, at farmsteads, and at lake resorts. ... they did not nest at the Jordheim farm southwest of Kyle until the late 1970s."[35]

Although human presence has had positive effects on the species mentioned, the negative effects on many others require ongoing, vigilant scrutiny.

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Short-eared Owl becoming more of a winter bird? *Doug Gilroy*

ADDITIONS TO THE BIRD LIST OF MANITOBA (1991-1996)

RUDOLF F. KOES, 135 Rossmere Crescent, Winnipeg, MB R2K 0G1

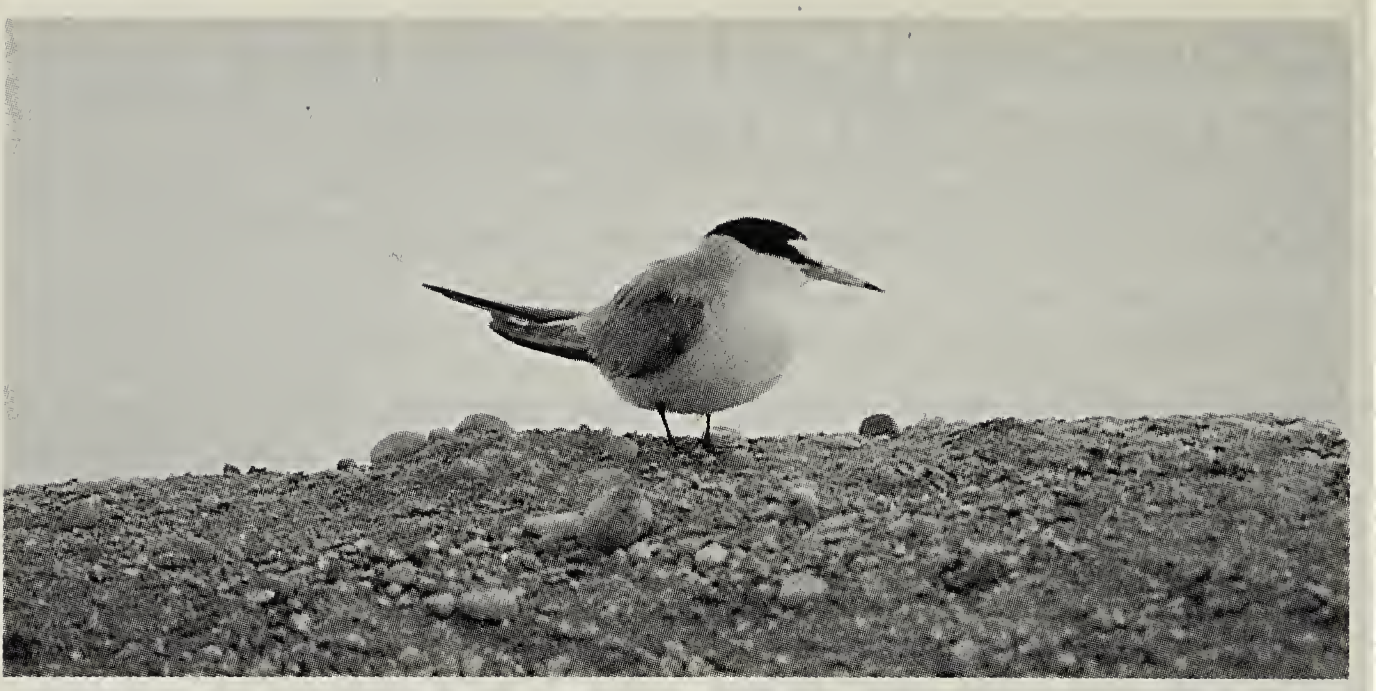
(Editor's Note: After review it was decided to add a number of notes to this article. These are given in parentheses and italics.)

Reports on additions to the bird list of Manitoba, covering the periods 1975-1984 and 1985-1990, have previously appeared in the *Blue Jay*.[9,10] As another six-year period has passed, it is perhaps timely to review the species added since 1990. Except where noted, records herein were reviewed by the Manitoba Ornithological Records Committee (MORC) (H.W.R. Copland, Chair; R.F. Koes, R.W. Nero, and P. Taylor). Confirmed records (indicated by an asterisk) are those for which a specimen, photograph, or sound recording exists, or there are well-documented sight records by two or more competent observers. Unconfirmed sightings were convincingly documented by single, experienced observers. All other sightings were considered hypothetical.

White Ibis* An adult was present from 8 to 11 May 1991 near the town of Shoal Lake, where it frequented a number of sloughs on the Tony and Leonard Dutkywich farm. Several of the observers wrote convincing reports (MORC files), while Cliff Findlay described the occurrence in the *Blue Jay*.[6] Although this species has wandered to eastern Canada on a number of occasions, this sighting represents the first for the prairie provinces. Minnesota's first White Ibis, also an adult, was observed at Prairie Island, Winona County, on 13 May 1995.[19] White Ibises have also been observed, albeit very rarely, in most of the other upper midwestern states, including North and South Dakota.[5] Most such observations involve wandering immatures in summer and fall. *(The range of the White Ibis typically runs from the southern United States to Peru and Venezuela.)*

Mute Swan* The status of the Mute Swan in Manitoba was described in 1991.[10] In question at the time was not the presence, but the origin, of birds that had been seen in the wild. A sighting made on 21 May 1994 at Springer Lake in Nopiming Provincial Park has been accepted as the first involving probably a "wild" bird. Four experienced birders were engaged in a "Big Day" effort (a Big Day is an attempt by a birdwatcher to see as many species of birds as possible in a 24-hour period) when they first heard the noisy wing beats, then saw a Mute Swan fly by at close range.[12] Particular care was taken to look for leg bands or any other indication that the bird might have escaped captivity, but none was seen. Indeed, the swan flew so strongly, at such a remote location, that it was believed to be wild. It may have originated in the Great Lakes region, where a feral population exists. *(The Mute Swan is a native of Eurasia and breeds in a wild or semi-wild state in B.C., southern Ontario, plus several Great Lakes and eastern seaboard states.)*

White-tailed Kite White-tailed Kites, which nest no closer to Manitoba than southern Texas and Washington



Least Tern *Dennis Fast*

state, are known to wander widely: north to Minnesota and the Dakotas, and east to Massachusetts and New York.[5] In light of this, a report by Wally Jansen of a bird seen flying along Highway 6 near Ashern on 16 April 1995 seems plausible. Unfortunately, the bird was seen only briefly, from a moving vehicle, and the descriptions provided were not conclusive (MORC). *(The White-tailed Kite ranges along the coasts of Texas and California-Washington and south through much of South America.)*

Least Tern* Getting up early on 1 June 1992 paid off handsomely for Victor Reimer, when he spotted an adult Least Tern at a gravel pit behind his home near Steinbach. Only his father Jim and fellow birder Dennis Fast arrived early enough to see this diminutive tern; by 8 a.m. it had departed and was not seen again. Fortunately, by this time, both Victor and Dennis had thoroughly documented the occurrence on film. A fine photograph appeared in *American Birds* 46(5):1147. Perhaps surprisingly, this was the first sighting in the province, as the species breeds along the Mississippi-Missouri river system as far north as North Dakota.[18] Smith (1996) lists nine sightings and one photographic record of Least Tern for Saskatchewan.[4] *(The Least, Little and Saunders's Terns look very similar. While the most logical choice of species is the Least Tern as it breeds from North Dakota south, the other two species are technically possible. The Little Tern breeds from Britain to New Zealand and Saunders's Tern ranges from western Africa, Arabia to eastern India. See the following article.)*

White-winged Tern* Much farther away from home than the Least Tern was a White-winged Tern which appeared in the viewfinder of Arnet Sheppard's video camera, as he was recording the bird life of Cape Merry, Churchill, on 24 June 1995.[14] Realizing the rarity of the occurrence, Mr. Sheppard had the presence of mind to keep the videotape rolling and he obtained brief, but diagnostic, footage. Three days later, unaware of the initial sighting, two Dutch researchers, J. van Gils and I. Tieleman, informed Joseph Jehl, Jr. that they had seen a “black” tern at Twin Lakes, about 25 km to the southeast of Cape Merry. Upon investigating the report the same evening, Jehl and S. Yaeger found the White-winged Tern in and near an Arctic

Tern colony at West Twin Lake. Pertinent field marks were noted, photographs were taken, and the interactions between both tern species were studied.[8] Although numerous visits to the area were made by different parties over the next week-and-a-half, the bird did not reappear. Then on 13 and 14 July, the White-winged Tern was seen again at Churchill by T. and B. Holcombe and B. Chartier; MORC did not receive details on these most recent sightings.[14]

The White-winged Tern is a Eurasian species, which has been reported with increasing frequency in northeastern North America in recent years. The Churchill bird was the first reported for the prairie provinces. *(The White-winged Tern nests from central Europe to Mongolia and winters in Africa and Australasia. This species of tern has been recorded in many North American locations.)*

White-winged Dove* The presence of a White-winged Dove in Thompson from 13 August to 5 September 1995 has been documented in detail.[11,15] Another first for the prairie provinces, the dove was captured on 5 September to prevent it from eventually succumbing to the inevitable bitter cold of a northern Manitoban winter. The dove presently makes its home in the Tropical House of the Winnipeg Zoo. *(The White-winged Dove normally ranges along the U.S.-Mexico border and south. Several have been recorded in Canada, although it is possible this is an escaped cage bird.)*

Tufted Titmouse The Tufted Titmouse, normally a sedentary species, was believed to be undergoing one of its rare expansion episodes in eastern Canada in the fall of 1995.[20] Could this phenomenon account for the sighting of one in Winnipeg on 11 November 1995 by D. Phillips? The report came to light only at a much later date and MORC is not aware of the details. This was the third hypothetical occurrence in the province.[16] *(The Tufted Titmouse inhabits much of the eastern U.S. and is a scarce permanent resident in southern Ontario.)*

Worm-eating Warbler* Birding was slow during the cold and miserable spring of 1996, but a flurry of activity in late May changed all that and kept birders hopping. On 20 May Adolf Ens, Rob Nickel and Ron Boese studied a Worm-eating Warbler at close range during a “fall out” of numerous passerines at Delta, on the south shore of Lake Manitoba. The warbler remained in the area until at least 27 May and during the intervening period it was seen by virtually all who looked for it. Manitoba’s first occurrence was well-documented on film, videotape and paper.[2] (See colour insert for an example of this species.)

A secondhand report of a bird at Lundar, on 3 September 1996, was not supported by documentation.[3] There is one confirmed record of the species for Saskatchewan.[7] *(The Worm-eating Warbler occurs throughout much of eastern U.S. Some states have had dramatic declines which have stabilized or reversed in recent years. Overall, during the last 30 years it has shown a slight increase.)*

Kentucky Warbler* Bob Shettler discovered an adult in his wooded backyard along the banks of the Assiniboine River just west of Winnipeg on 18 September 1994.[13] Many birders converged on the area soon afterwards, but only a lucky few managed to see the warbler.

Kentucky Warbler *Dennis Fast*

Coincidentally, four days earlier a possible sighting had been made in Winnipeg, but this bird was not seen well enough or long enough for positive identification.[13]

A reported sighting at Delta on 25 May 1958 was not supported by any details, nor was one at Lundar on 27 August 1996.[3,17]

One day after the discovery of the Delta Worm-eating Warbler, Hélène Gauthier, a visitor from Québec, noticed a Kentucky Warbler in an Altona backyard. Later that day (21 May) several Altona birders confirmed the report and by dawn on the 22nd other birders started to arrive. Although the bird was very elusive, skulking under bushes and in tall grass, most managed a few good looks. Dennis Fast obtained diagnostic photographs.[2] *(The Kentucky has a range similar to that of the Worm-eating Warbler.)*

MORC continues to solicit — indeed, encourage — your contributions detailing sightings of rare birds. We would be particularly grateful for additional accounts that might support some of the unconfirmed or hypothetical records mentioned above, or any details on Manitoban sightings of the Spotted Towhee or Bullock's Oriole. (These two species (re)gained species' status in 1995.)[1]

Acknowledgements. I thank Peter Taylor for the many helpful suggestions he made on a draft of this article. Elinor Rozmus assisted with computer-related queries.

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* * *

"The early bird gets the worm — A nod's as good as a wink to a blind horse — Every dog has his day in this world — He drank like a fish — This country is going to the dogs — It's raining cats and dogs — If a bear comes after you, Sam, you must be up and doing or it's a gone goose for you." These are some of the "animal-oriented" expressions among the many sayings attributed to a fictional Sam Slick, a Yankee clockmaker, that have become part of our language. They were written by Thomas Chandler Haliburton, a Nova Scotia judge and humorous novelist.

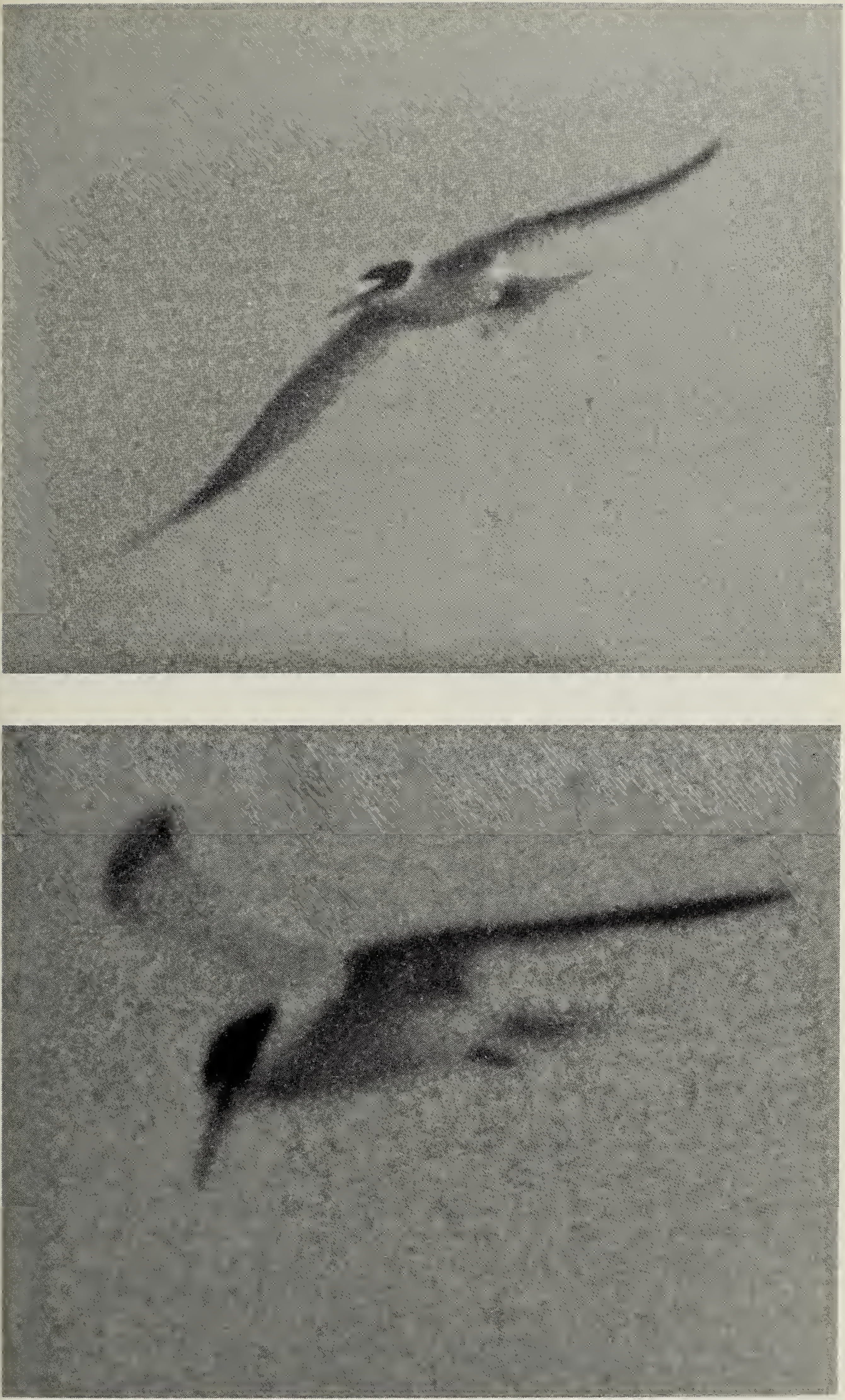
PROBABLE LEAST TERN PHOTOGRAPHED IN SASKATCHEWAN

J. PAUL GOOSSEN and SAM BARRY, Canadian Wildlife Service, Room 200, 4999 - 98 Avenue, Edmonton, AB T6B 2X3

In the United States, the Least Tern (*Sterna antillarum*) breeds in coastal and inland aquatic habitats.[2] The interior population of this species is considered endangered, with about 5,000 individuals remaining.[23] This small tern is rarely seen in Canada. It is considered accidental in Nova Scotia and New Brunswick, with sight records for Ontario and a possible specimen record "near Quebec."[12] In 1921, A.C. Bent suggested that "many of the records are doubtful" for Nova Scotia and Ontario, and those for Newfoundland and Labrador "are very doubtful."[7] A Least Tern, recently photographed in Manitoba, was reported as the first provincial record for this province.[3,15] It has not been recorded in Alberta[11] nor British Columbia.[9] In Saskatchewan, the Least Tern's presence has been considered hypothetical,[19,16] however, recently its status was upgraded to confirmed,[21] based on photographs which we publish with this note. We document, with photographic evidence, a probable sighting of a Least Tern in southern Saskatchewan, reassess the recent status change and summarize Saskatchewan reports of this species.

On 5 June 1991, while participating in the first international Piping Plover (*Charadrius melodus*) census,[13] we observed a small tern flying at the south end of the Cookson Reservoir near Coronach, Saskatchewan. The tern was briefly observed hovering and diving into water. Skies were overcast and winds were estimated to be 10-15 km/h. The tern, judged to be about the size of a Black Tern (*Chlidonias niger*), had a yellow bill, white forehead, black cap and reddish legs. Its upper primaries were black and its tail was short. Several photographs of the tern were taken by S. Barry and submitted for identification to Michel Gosselin of the Canadian Museum of Nature. After examining the slides, Gosselin indicated "The bird is obviously a Least Tern." However, from the photographs submitted, he could not verify the tail and rump colour which would rule out the "unlikely" possibility that the species was a Little Tern (*Sterna albifrons*). Duplicate slides of the tern photographed by Barry were submitted to the Royal Saskatchewan Museum.

The Little Tern, which breeds in Europe, Asia and Africa and was once considered by some as conspecific with the Least Tern,[2] is nearly identical to the Least Tern but differs in size, voice, and rump and tail colour.[18] Little Terns have longer wings and bills, and lighter coloured tails and rumps than Least Terns.[18] Another possibility is that the species was a Saunders's Tern (*Sterna saundersi*) which is also similar to the above two species but breeds along the Arabian and Red seas and Persian Gulf coast.[10] This latter species can be ruled out as it does not have reddish legs.[10] The Amazon Tern (*Sterna superciliaris*) and the



Probable Least Tern photographed at Cookson Reservoir, Saskatchewan, 5 June 1991 *Sam Barry*

Table 1. REPORTED SIGHTINGS OF THE LEAST TERN IN SASKATCHEWAN (1957-1991)

Date	Location	Number	Habitat	Source
26 May 1957	near Regina	1[a]	flooded field	Brazier 1960
early May 1980s[b]	Regina	1	marsh	F. Lahrman, unpub. data
6 July 1981	Fort Qu'Appelle	1	river	Houston and Houston 1986; R. Hooper, pers. comm.
27 July 1982	Rowan's Ravine	2	lake	Lindgren and Lindgren 1986
28 May 1983	Regina	1[c]	creek	F. Brazier, unpub. data
24 June 1984	Rowan's Ravine	1	lake	Lindgren and Lindgren 1986
26 May 1989	Fort Qu'Appelle	1	river	R. Hooper, unpub. data; Bennett 1989a
24 June 1989[d]	Estevan	1	river	Smith 1996; A.R. Smith, pers. comm.
5 June 1991	Cookson Resevroir	1[e]	reservoir	this note
8 June 1991	Lake Diefenbaker	1[f]	pool on lake shore	W. Harris, pers. comm.; Roy 1996

a) Belcher (1980) considers this sighting to be "an incomplete sight record"; b) year uncertain but approximately 1983 or earlier on Wascana Marsh; c) probable sighting along Wascana Creek; d) the sighting of a Least Tern near Estevan on 2 July 1989, as reported in Bennett (1989b), is probably the same record as that of 24 June 1989 (G. Bennett and S. Shadick, pers. comm.) but with an incorrect date; e) photographed by S. Barry; f) four km east of Grainland.

Peruvian Tern (*Sterna lorata*) were also ruled out (M. Gosselin, *in litt.*).

The nearest Least Tern breeding locations to Saskatchewan are in Montana along the Missouri River[22,23] about 105 km south of the Cookson Reservoir. We consider it highly unlikely that the tern photographed at Cookson's Reservoir was a Little Tern given that its usual range does not include North America. Also, the American Birding Association[1] and M. Gosselin (pers. comm.) say that the species has not been recorded for North America. The only report of a Little Tern in North America seems to be that of a bird seen at Fort Qu'Appelle by "two young Swedish ornithologists who thought this was an ordinary 'ho hum' sighting of the Little Tern so familiar to them." The bird, however, was recorded as a Least Tern.[14]

Although sandbar habitat exists along the South and North Saskatchewan rivers, we think it is unlikely that the Least Tern will establish itself as a breeding species in Saskatchewan. The presence of vagrant individuals may simply be weather-related, as suggested for the first reported sighting of this species in Saskatchewan.[8]

There are 10 reports of the Least Tern in Saskatchewan (Table 1). Terns were seen primarily by lake or riverine habitat during spring (N=6) and summer (N=4). No fall records are known for this tern in Saskatchewan. All sightings were of single birds, with one exception when two terns were seen. To conclusively verify the occurrence of the Least Tern in Saskatchewan, a specimen would be required or possibly better photographs and a recording of the bird's vocalizations.

It appears that the Least Tern's status, although recently considered confirmed by Smith, based on Barry's photographs, must remain hypothetical in Saskatchewan until a specimen is found or more detailed photographs are taken showing all key characteristics.

Acknowledgments. We thank Frank Brazier, Ronald Hooper and Fred

Lahrman for kindly providing unpublished information. M. Gosselin of the Canadian Museum of Nature tentatively confirmed the identification of the tern from slide photographs taken by Sam Barry.

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PLANTS

SMOOTH GOOSEFOOT DISCOVERED IN THE WEBB SANDHILLS

DIANA BIZECKI ROBSON, 2113 Aird Street, Saskatoon, SK S7N 0T3

While conducting research for a Master's thesis project on rare plants, I discovered three new populations of Smooth Goosefoot (*Chenopodium subglabrum* (S. Wats.) A. Nels.) in the sandhills north of Webb, Saskatchewan. As Smooth Goosefoot is considered to be a vulnerable (i.e. could become threatened or endangered under current conditions) species by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), this discovery is particularly important.

A voucher specimen was collected only at the first site as I did not want to endanger the populations by removing more specimens. The voucher specimen is on file in the W.P. Fraser Herbarium, University of Saskatchewan, Saskatoon, SK. Pictures were taken at the remaining two sites to document the sighting (Figure 1).

Smooth Goosefoot is an annual, wind-pollinated plant that is found on active or semi-stabilized sand dune blowouts. The plant is erect to semi-erect with ascending branches[1] (Figure 2). The leaves are fleshy, linear, entire, one-veined and hairless or slightly powdery.[1] The inflorescence is open and leafy with small flowers in clusters called glomerules.[1] The

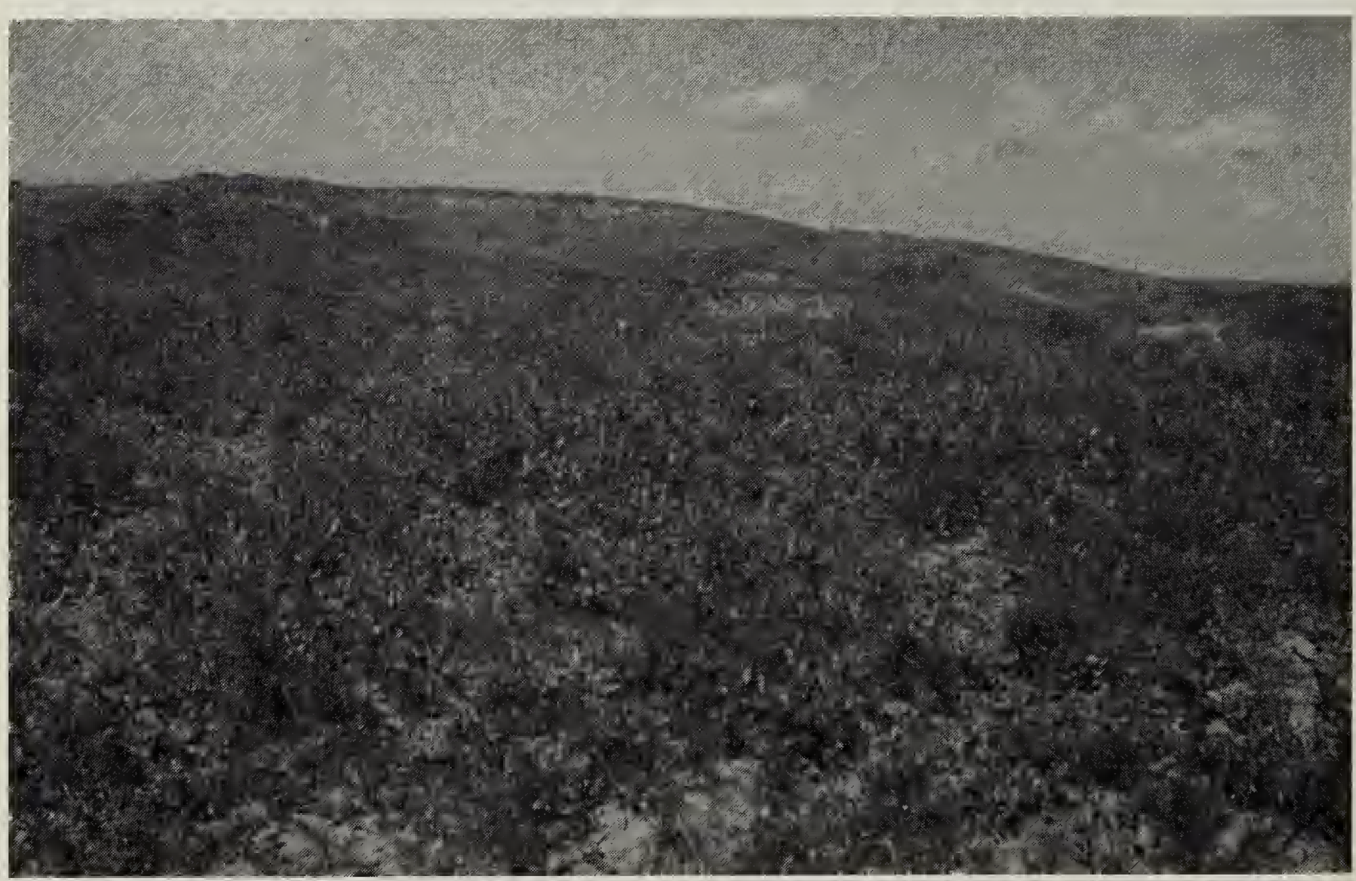


Figure 1. Habitat of Smooth Goosefoot on a sand dune blowout

plants flower late in the summer, and are found in southeastern Alberta, southern Saskatchewan and southwestern Manitoba.

I discovered the first population of Smooth Goosefoot on 23 July 1996 in a PFRA pasture 12 miles (19 km) northeast of Webb (SW1/4 S26 T15 R16 W3). There were 55 plants randomly distributed on a mobile sand dune blowout. This blowout also contained two other provincially rare plants: Bur Ragweed (*Franseria acanthicarpa*) and Annual Skeleton-weed (*Lygodesmia rostrata*).

On 24 July 1996, a small population was found in a dune blowout 4.5 miles (7 km) north of Webb (SW1/4 S6 T15 R16 W3). There were 39 Smooth Goosefoot plants in this area. As well, populations of three other provincially rare plants were present: Sanddune Wheatgrass (*Agropyron dasystachyum* var. *psammophilum*), Bur Ragweed and Annual Skeleton-weed.

Smooth Goosefoot was found again the following day (25 July 1996) on a mobile sand dune blowout six miles (10 km) north of Webb (S18 T15 R16 W3). Only 13 individuals were found at this location. Annual Skeleton-weed also occurred in this habitat.

Smooth Goosefoot was associated with a number of common dune species: Scurf Pea (*Psoralea lanceolata*), Indian Rice (*Oryzopsis hymenoides*), Canada Wild Rice (*Elymus canadensis*) and Sand Dock (*Rumex venosus*).

Most dune plants are early successional species which help stabilize eroding dunes. Ironically, dune plants are experiencing a loss of habitat due to this stabilization. The dominant cause of dune stabilization is long-term climatic change.[2] Over the last few centuries, there has been a climatic cooling trend which has promoted stabilization.

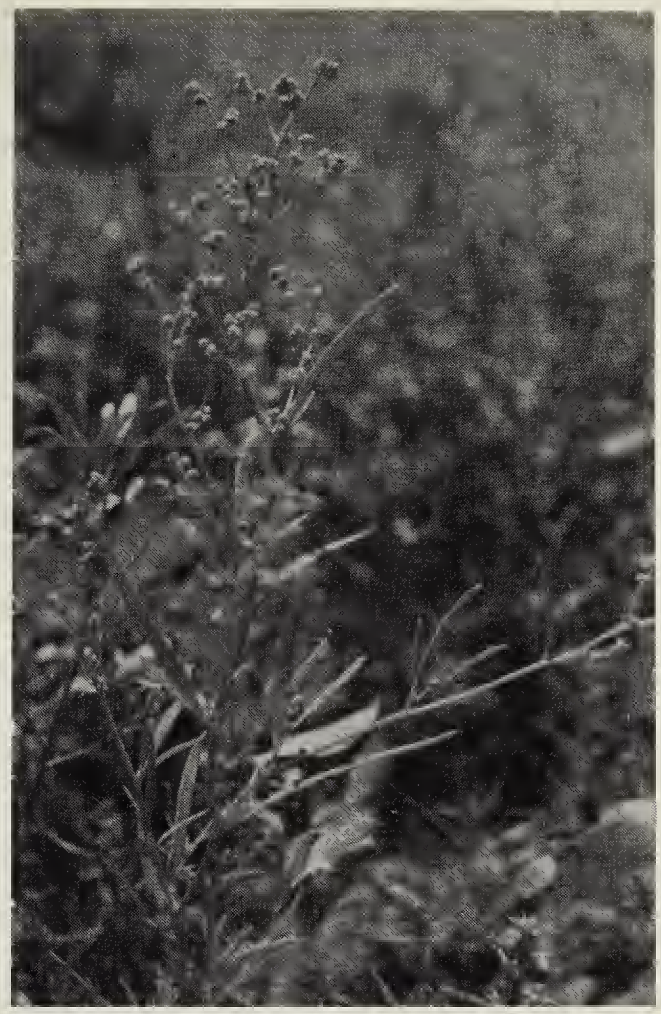
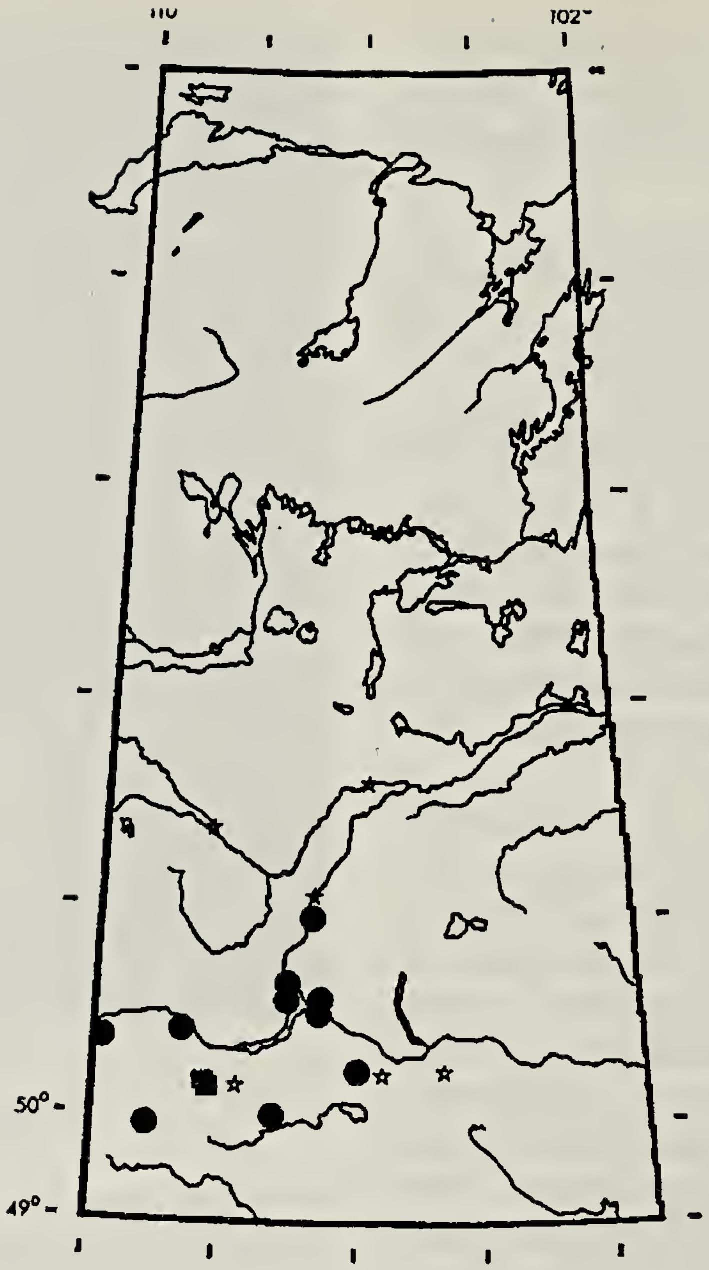


Figure 2. Smooth Goosefoot
(Chenopodium subglabrum)

Prior to the discovery of three populations of Smooth Goosefoot near Webb, this species had been found mainly in the dunes along the South Saskatchewan River valley (Figure 3). Smooth Goosefoot's detection in the Webb sandhills suggests that it may be more widespread than previously thought. Continued monitoring of known populations and botanical field surveys of other dune areas in the prairie provinces will help to determine the true status and distribution of this plant.

Acknowledgements. I would like to thank the Prairie Ecosystem Study and the Heritage Foundation for their financial support of my research.



Chenopodium subglabrum
(SMOOTH ARID GOOSEFOOT)

● PREVIOUS POPULATIONS

■ NEW POPULATIONS

Figure 3. Distribution of Smooth Goosefoot in Saskatchewan.

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A BIRDER LOOKS AT FLOWERS

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The Editor knows that if you "scratch a naturalist, you'll find a birder inside," and has offered some ideas why that is so. A major reason is that birds move, whether to pick sunflower seeds out of people's hands or to chase squirrels around the back yard (see *Blue Jay* 54(4):ii). Flowers are attractive to most people, but they move only when the wind blows or people pick them. You can describe what and where they are, and how many, but not what they do. Some birders however, including the Editor and I, see them too.

In my first summer in the prairie provinces (studying Buffleheads in Alberta, 1964)[2] I didn't have a plant book along and I took few notes, though my slides included a well-defined "trail of cottongrass" (*Eriophorum vaginatum* var. *spissum*) marking plant regeneration along a bulldozed seismic line (for oil exploration). On returning to Manitoba for bird census work in 1972, I took along a copy of Scoggan's *Flora of Manitoba*,[6] then the authoritative plant list there. My field work then was around Mafeking, Manitoba on the eastern edge of the Porcupine Provincial Forest with measured plots in various habitats on which, besides birds, flowering plants that were new or interesting to me were noted. It wasn't a systematic plant study,[4] but it produced some apparent novelties.

Trillium cernuum *(Nodding Trillium)*
Wayne C. Harris

From the first week of surveys, it was obvious that hardly anyone had collected plant specimens in that part of Manitoba, which for Scoggan meant that the species wasn't known there. Nodding Trillium (*Trillium cernuum*) was frequent in the poplar plot, but Scoggan knew of no records/specimens north of Riding Mountain. More notably, Purple Clematis (*Clematis verticillaris*), which I knew well from Ontario, was listed only as hypothetical, with no specimens known from Manitoba, although the species had been reported. After reading that account, I returned to the balsam fir stand to get a photo of the one I'd found, but I couldn't relocate it (even with notes). When I was next in that region, 20 years later (1992), I found Purple Clematis in several places, but by then others also had found and reported it locally. Slender Beardtongue, *Penstemon gracilis,* was another flower noted in 1972 that hadn't been collected so far north when Scoggan's *Flora* was published.

The small balsam fir area northeast of Mafeking was also notable for orchids, of which no specimens were collected (only memories). By the time the surveys were completed in early July, nine species and one additional variety of orchids were noted on that 16-ha plot. In order of their flowering, with numbers of plants and first date seen there, were:

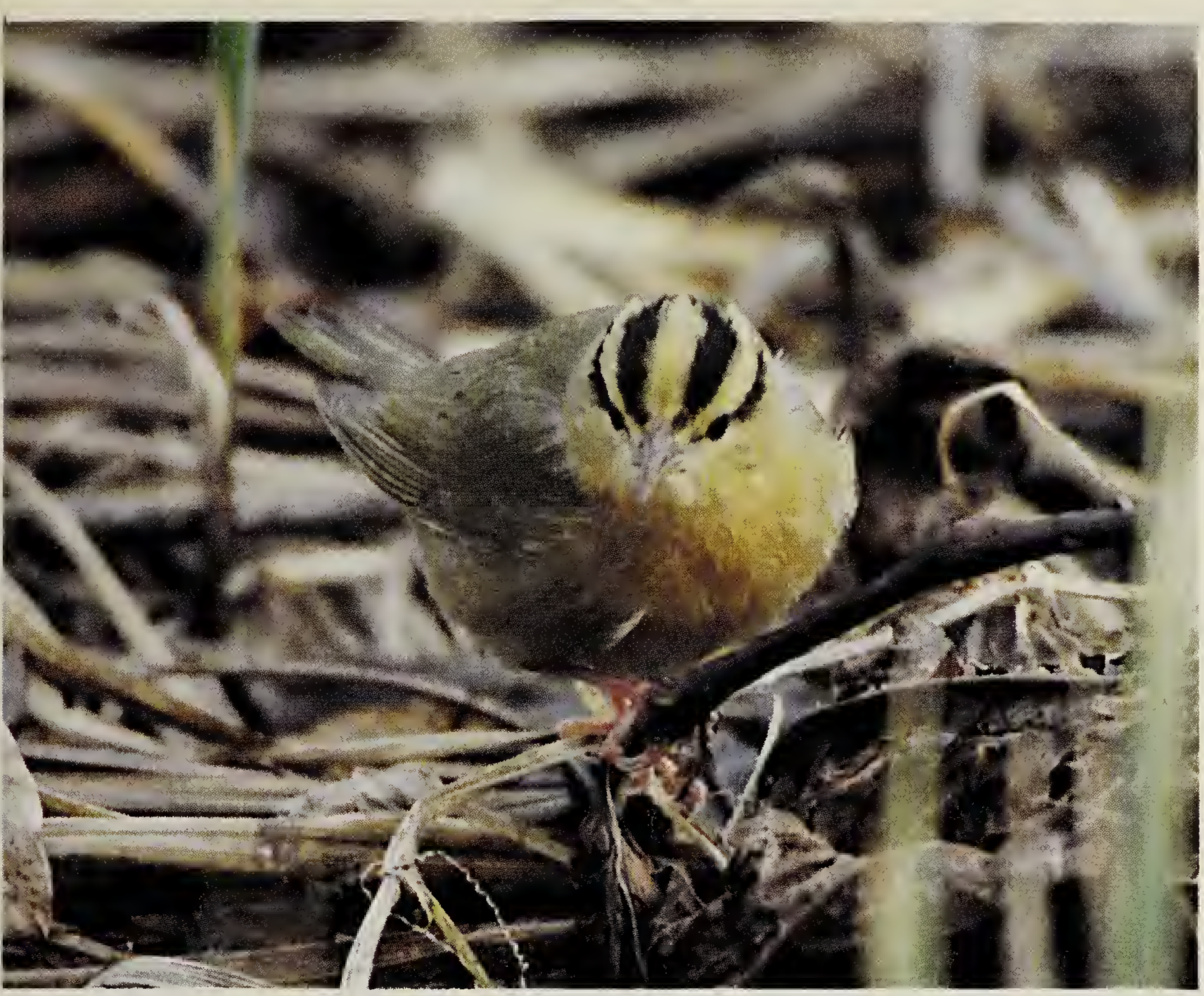
- Fairy-slipper *Calypso bulbosa* (3, 14 May);
- Yellow Lady-slipper *Cypripedium calceolus*, both typical and small [var. *parviflorum]* (3, 9 June; and 21, 9 June);
- Green Coralroot *Corallorhiza trifida* (4, 9 June);
- Spotted Coralroot *Corallorhiza maculata* (28, 11 June);
- Round-leaved Orchis *Orchis rotundifolia* (33, 18 June);
- Round-leaved Fringed-orchid *Habenaria orbiculata* (1, 18 June);
- Showy Lady-slipper *Cypripedium reginae* (1, 30 June);
- Northern Green Fringed-orchid *Habenaria hyperborea* (10, 4 July);
- Blunt-leaved Fringed-orchid *Habenaria obtusata* (1, 4 July).

Possibly some of the later-blooming orchids also occur there, but bird song was ceasing and I left the area 9 July.

The balsam fir plot was a good site, as no other orchid species turned up on the other plots that year, and four of those listed above were found only on the balsam fir plot. Evidently that was the richest habitat as to orchid diversity, with more species even than in the Turtleford area Muriel Carlson laboured to protect.[1] I have only once seen the Showy Lady-slipper since then, and another showy flower there that I never met again was the Fringed Milkwort (*Polygala paucifolia*).

The variety of orchids there was impressive, but some orchid species occurred in much larger numbers on bird census plots worked in other years. Orchids aren't always as rare as they often are made out to be, although they easily can become rare if people pick them in bunches. Near Dore Lake, Saskatchewan, in 1973, my notes included over 600 plants of Spotted Coralroot on a mature birch/poplar plot before I gave up counting them, and there were over 120 plants of Northern Green Fringed-orchid in a black spruce stand there. On 4 June 1974, in another black spruce area on lower slopes of Steamboat Mountain, BC (mile 346, Alaska Hwy, elev. 650 m), I was delighted by over 135 flowering plants of Fairy-slipper, including 73 plants so massed as to fill a 35 mm camera slide.

Those numbers were counts of plants seen along the marked lines of the plot grid; extrapolation to the full area of those plots suggested much larger numbers. For example, with lady's-slippers and Fairy-slipper assume that I detected half the blooms in a strip 5 m wide on either side of each line. With Green Fringed-orchids and coralroots, it would be optimistic to assume that I saw half the blooms, even in a strip only half that wide. As grid lines on those plots were 50 m apart, extrapolation using those detection rates indicated over 12,000 Spotted Coralroot plants and over 2,400 Green Fringed-orchids on those



Worm-eating Warbler, a new Manitoba record *Dennis Fast*

Dryland Sunflower *Clare Hume*

Fairy Slippers *Garth Nelson*

Red Squirrel

Peter Suzle

Red Fox family *George Tosh*

Dore Lake plots, and over 1,350 Fairy-slippers at Steamboat Mountain. Those estimates are certainly rough, but not wildly exaggerated. After counting orchids during a nearly birdless survey of a bog in Newfoundland, Bob Lamberton (*in litt.* to AJE) estimated 40,000 blooms of Dragon-mouth (*Arethusa bulbosa)* on that 40-ha plot.

I wasn't successful in naming all the flowers I found in 1972. A rather showy "pink chickweed" from the roadside on Porcupine Mountain remained unnamed, as Scoggan's keys to that group made no mention of colour, which of course was what had drawn my attention to that plant. His reliance for identification on tiny flower parts, only detectable by my eyes from fresh material (if then), was frustrating. The next two summers, in Saskatchewan[3] and on the Alaska Highway, I used instead *Flora of Alberta*,[5] which was much more user-friendly. In the 20 years since, far more and better illustrated wild flower guides have become available to naturalists, but being able to find your way through a plant key may save you trips to the herbarium for common flowers. More important still, you are more likely to save specimens if you hope to key them out, and some of your specimens may extend the known ranges of those species.

It helps if you can find simple keys to start with. Long ago, plant identification was taught in public schools. In 1956 I acquired a flora,[7] authored by a high school inspector and two science masters in Ontario, but with coverage ranging across Canada. That book concentrated on the common plants; it had no pictures but its keys for identification were simple enough for any beginner to use, with a little patience. Grasses, sedges, and willows, except a few distinctive species, are better left to specialists, but it wasn't difficult to learn most of the obvious flowers in areas visited regularly. The main need is to want to do it.

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* * *

Bird Names

Bonaparte, Charles Lucien Jules Laurent (1803-1857), Prince of Canino and Musignano, nephew of Napoleon, author and naturalist — Bonaparte's Gull.

Clarke, William (1770-1838), Captain in the U.S. Army, expedition leader and author — Clarke's Nutcracker.

Cooper, William (1798-1864) One of the founders of the New York Lyceum of Natural History — Cooper's Hawk.

BERRY SOUP, PEMMICAN AND OTHER NATIVE USES OF COMMON BERRIES

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For many of us, berries find their way into our diet primarily as jams, jellies and syrups or as cranberry sauce served with Thanksgiving turkey or in pies. We tend to like our berries sweetened and use them to flavour bread and other baked goods. People of other times and other cultures have used berries in a great variety of ways, reflecting differences in taste and cooking practices as well as technologies available for preserving ripe fruit. This article focuses on traditional food uses of common berries by Saskatchewan's native people. These uses date from a time when drying was an important method of food preservation and the diet was meat-based and largely free of flour and sugar. (Although sugar appears in the recipes given below, it is a recent addition and would have been replaced by sweet berries or simply left out in the past.)

Native peoples of the plains made extensive use of abundant summer-ripening berries, especially saskatoons and choke cherries. People searched for good berry crops and spent considerable time and trouble picking and drying them. Carefully dried berries kept indefinitely and were easy to transport. They were an ideal addition to pemmican, a mixture of dried meat and fat to which the dried berries added flavour without adding moisture that could cause spoilage. They were also popular in soups and stews. They softened on cooking but didn't get mushy, and added a nice flavour, especially to meat-based soups. Berry soups were company food and a must at certain ceremonies, some of which occurred in spring before fresh berries became available, increasing the importance of preparing a large quantity of dried berries for later use.

Native people living in Saskatchewan's boreal forest relied heavily on berries that ripened in the fall, such as low-bush cranberries and blueberries. They also used the less abundant choke cherries and saskatoons in the same way as the plains tribes but to a lesser extent. Fall-ripening berries were picked late in the year, which often made it more practical to preserve them by freezing than by drying. The number of fish and berry combinations in the northern native diet is striking. Uses of some of our most common berries are presented below. (Throughout this article the term berry is used in its broadest sense to mean a fleshy fruit and is not limited to the fruit type defined botanically as a berry.)

Choke Cherry (*Prunus virginiana).* Choke cherries are mostly pit, as you probably know, and this pit contains cyanide-producing compounds, which you may not know. This is not a problem for the casual user or for people who make syrup or jelly and throw out the pits, but it would have been serious for native peoples who ate large quantities of these berries, pits and all. The traditional plains Indian way to prepare choke cherries for eating was to pound the fresh berries on a flat rock with a hammer stone. This process is so characteristic of choke cherries that their Cree name is *takwahiminan* which means "the berry that is pounded." Handfuls of these crushed fruits were formed into patties and, according to Buffalo Bird Woman, an Hidatsa Indian from North Dakota, "on warm days they dried in three days' time. But if it was damp and chilly, it might take five or six. They were ready when a lump broke dry clear through."[9] Exposing the crushed fruit to slow drying apparently removed the danger of cyanide poisoning. (**Editor's note:** Cyanide is decomposed to carbon dioxide and ammonia by bacteria (*Nitrosomonas, Nitrobacter* and others), in the presence of water and air. In summer this reaction takes a few days.)

Dried pounded choke cherries were added to pemmican, were eaten alone or put into soups for flavour. Lewis, of the Lewis and Clark expedition, describes the Indians he encountered on the upper Missouri River in 1805 as "boiling [crushed choke cherries] with roots or meat, or with the prairie beans [Hog-peanut, *Amphicarpa bracteata*] and white apple [Indian Breadroot, *Psoralea esculenta*]."[6]

Saskatoon (*Amelanchier alnifolia*). Saskatoons were added to pemmican and soups in the same way as choke cherries. Like choke cherries, they were dried first but drying them was a simpler process. Whole berries were placed on a hide and dried in the sun for several sunny days. I have done this myself and found that the dried berries keep for years and have a very nice flavour, some would say even better than the fresh fruit.

Beverly Hungry Wolf from the Blood Indian Reserve in southern Alberta, describes saskatoon berry soup made by her Blackfoot grandmothers as follows: "It was a healthy dessert and special treat, as well as a sacred meal for such times as medicine pipe ceremonies... If the berries are dried, they must be soaked until they have become somewhat tender. ... Mix the soaked berries with 3 quarts of good broth [for 1½ cups of dried berries] from the ribs or meat that you boiled for the main meal. Let this mixture boil until the berries are quite tender, then add a mixture of water and ¼ cup of flour, which will thicken the soup. Add 1 cup of sugar to sweeten to taste, and serve it."[4] Other recipes call for thickening the soup with powdered Indian Breadroot instead of flour, and adding other ingredients, such as Bitter-root (*Lewisia rediviva*) or blood from a freshly killed animal. Plains tribes also dried currants (several species of *Ribes*) and gooseberries (*Ribes oxyacanthoides*), which were used like saskatoons in this kind of soup.

Rose (*Rosa* species). Most of us are familiar with the fruit of the rose, called a rose hip (Figure 1). They are soft, red-orange and contain many little, hairy seeds which are reputed to be irritating to the digestive tract.

Rose hips are an excellent source of vitamin C, containing roughly five to ten times more than most of our other wild fruits, and the fact that they stay on the bushes throughout the winter, when other sources of

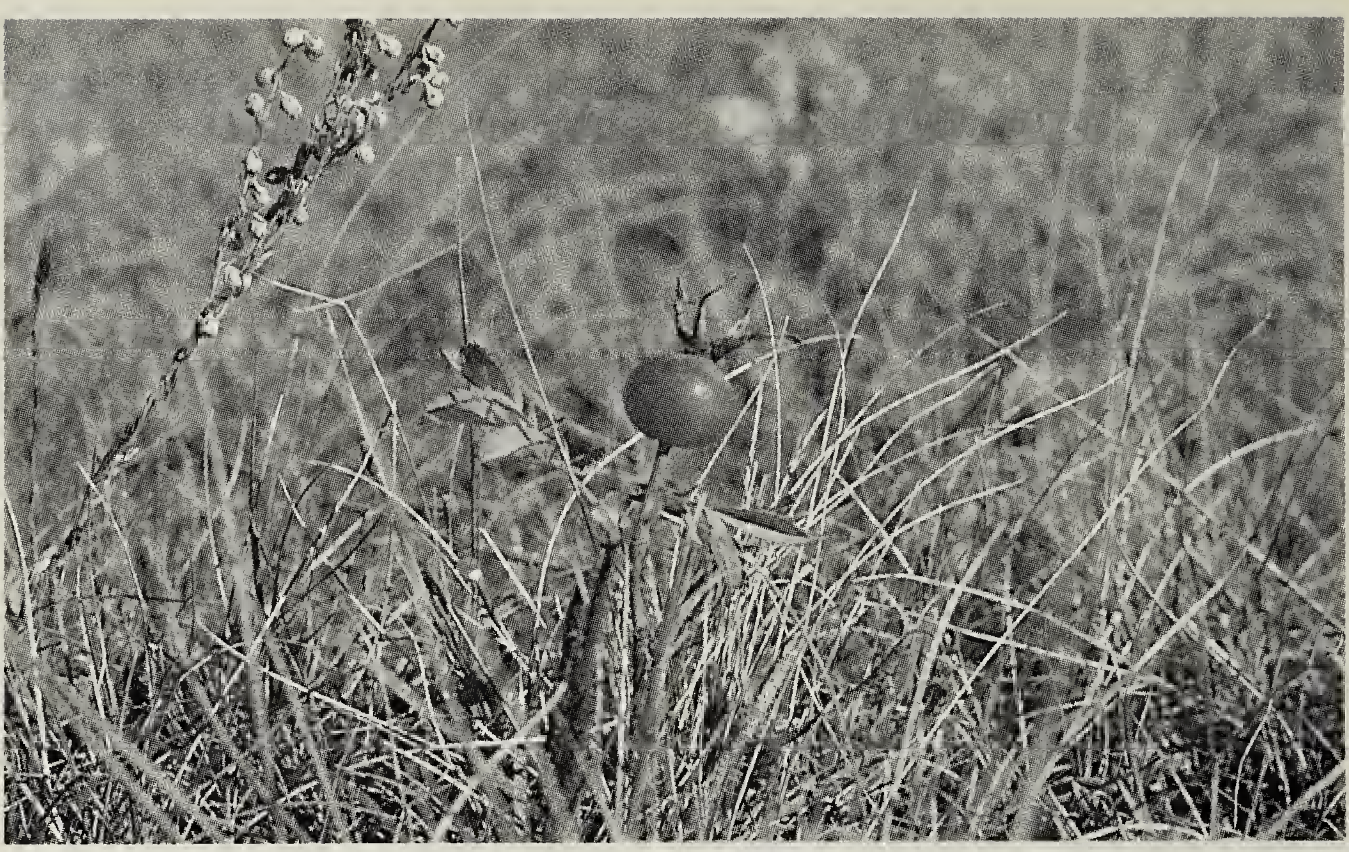

Figure 1. Rose hip of the Prairie Rose.

this vitamin may be scarce, makes them especially valuable.[5]

Native people of the plains ate rose hips cooked and mixed with fat. One Gros Ventre recipe, recommended for growing children, is a soup containing rose hips, marrow and internal organs of an animal (unspecified). Very small children were given rose hips as their first solid food — mixed with grease and put on a stick to eat like a popsicle.[1]

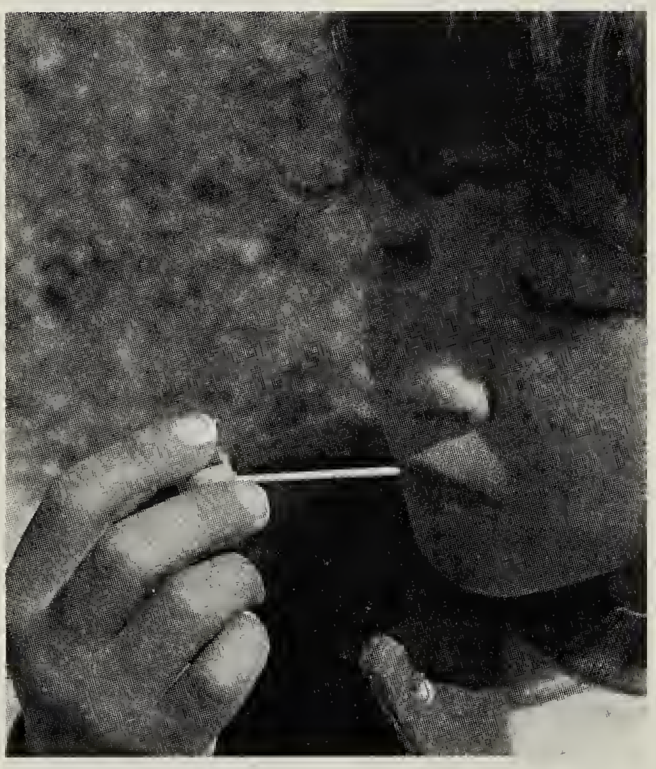

Figure 2. Cree boy smoking a rose hip pipe.

One of the more whimsical uses for this unusual fruit is the rose hip pipe, called *okiniwispwakan* in Cree. This child's toy is made by removing the seeds from half of a large hip to make a bowl, then inserting a hollow grass straw as the pipe stem (Figure 2).

Buffaloberry. There are two species of Buffaloberry in Saskatchewan: Thorny or Silver Buffaloberry (*Shepherdia argentea*), a very common shrub in the south of the province which has short thorns on the branch tips and grey-green leaves, and Canada or Russet Buffaloberry (*Shepherdia canadensis*), more common in the north, which lacks thorns and has a rusty hue to the leaves. The berries of both plants can be used in the same way.

Buffaloberries are small, transparent, red-orange and juicy (Figure 3). They tend to be too bitter for most people to enjoy until after a hard frost which sweetens them. Their small

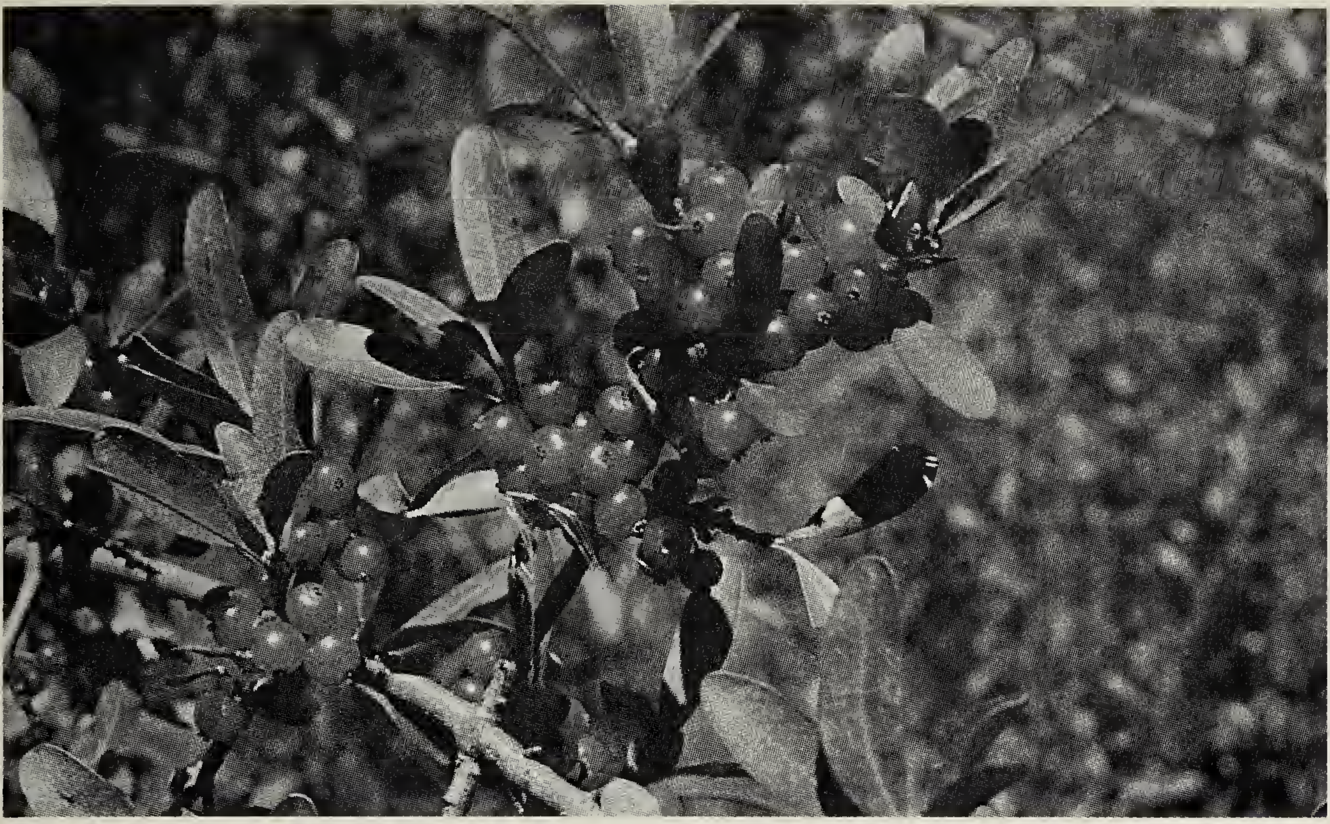

Figure 3. Thorny Buffaloberry.

size and position close to the branches make them difficult to pick, so they are gathered in large quantities by hitting the branches with a stick to knock the berries into a container or onto a cloth on the ground.

Native people on the plains ate the fresh berries, made juice by crushing them in a horn, and dried them like other berries for adding to soups. The most celebrated use of buffaloberries is "Indian ice-cream," a delicacy that comes to us from native people living west of the Rocky Mountains. It is a very special food among British Columbia tribes such as the "Ksan."[5]

To make Indian ice-cream, one cup of berries is crushed and mixed with ¼ cup of water. Then the berries are beaten until foamy and ¼ cup of sugar is added gradually while the mixture is beaten into a stiff foam. This foamy mixture is the "ice-cream" and is served immediately. The berries foam up because they contain soap-like compounds called saponins, small quantities of which are not harmful to people. Since the mixture will not foam if it comes into contact with grease, it is best to avoid using plastic utensils during the collection of the berries and during preparation of the ice-cream.

Bearberry (*Arctostaphylos uva-ursi*). This plant is best known as a traditional Native tobacco, a use that has given it the name kinnickinnick, an Algonkian term for plants put into smoking mixtures. Uses of the berries are less well known. Bearberries are mealy, with several noticeable seeds and not much flavour. The berries resemble low-bush cranberry in size and colour and can easily be mistaken for them where the two plants grow together in a dense carpet on the ground.

The berries are used to remedy diarrhea and are not eaten in quantity without first cooking in fat. Both the woodland Cree and the Blackfoot on the plains prepared dishes of mashed bearberries and fat. The Cree recipe calls for cooking 1½ cups of berries in a tablespoon of fat until they are bright red, then crushing them to a coarse paste and

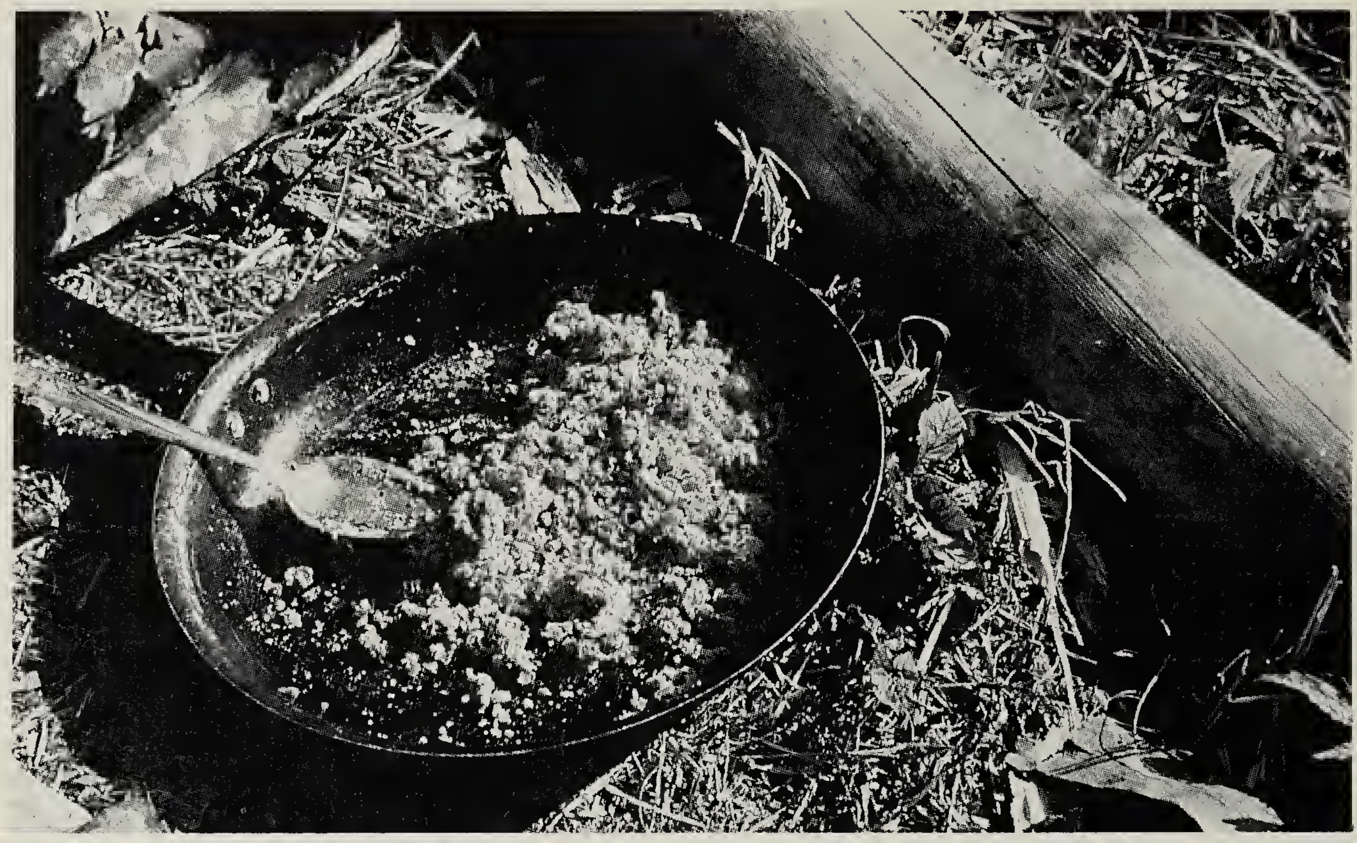

Figure 4. Bearberry and fish egg mixture.

adding several tablespoons of raw fish eggs to moisten the mashed berries and some sugar to sweeten them for children (Figure 4). This dish is called *asiskakwani-kahikan* in Cree. It can be made either in fall when the berries ripen, using fresh whitefish eggs or in spring, if the grouse and bears have left any berries on the plants, with the eggs of sucker.

Low-bush Cranberry (Dry-ground Cranberry, Lingonberry, Mountain Cranberry, Partridge-berry, *Vaccinium vitis-idaea*). Even more than the blueberry, this is the berry that is nature's gift to the people of the northern regions of the world. Although cranberries cannot compete with blueberries in taste, they produce an abundant crop every year, rather than one year in three for blueberries. In addition, fresh cranberries keep for a long time when simply stored in a cool place due to the presence of benzoic acid, which acts as a natural preservative.[7]

Saskatchewan's woodland Cree ate stewed cranberries with meat or fish, a use that parallels the current North American practice of eating cranberry sauce with turkey at Thanksgiving dinner. In addition, the Cree cooked the berries with a variety of nutritious parts of fish, such as fat, eggs, livers and swim bladder, as did Alaskan Eskimos.[5]

Other common berries: **Wolf-willow** or Silverberry (*Elaeagnus comutata*) has a grey-green, mealy but edible fruit sought primarily for its large woody seed which is used to make necklaces. Berries of **Juniper** (*Juniperus* species) which, botanically speaking, are cones, were used as medicine since they contain substances that act as diuretics and can induce uterine contractions.[5] They were also strung with rose hips to make colourful necklaces. **Red-osier Dogwood** (*Cornus stolonifera*) has clusters of small bluish-white, bitter berries. Many people believe the berries to be poisonous but they were, in fact, a food item for the Blackfoot and certain tribes on the west side of the Rocky Mountains. They were treated like choke cherries, but not gathered in such large

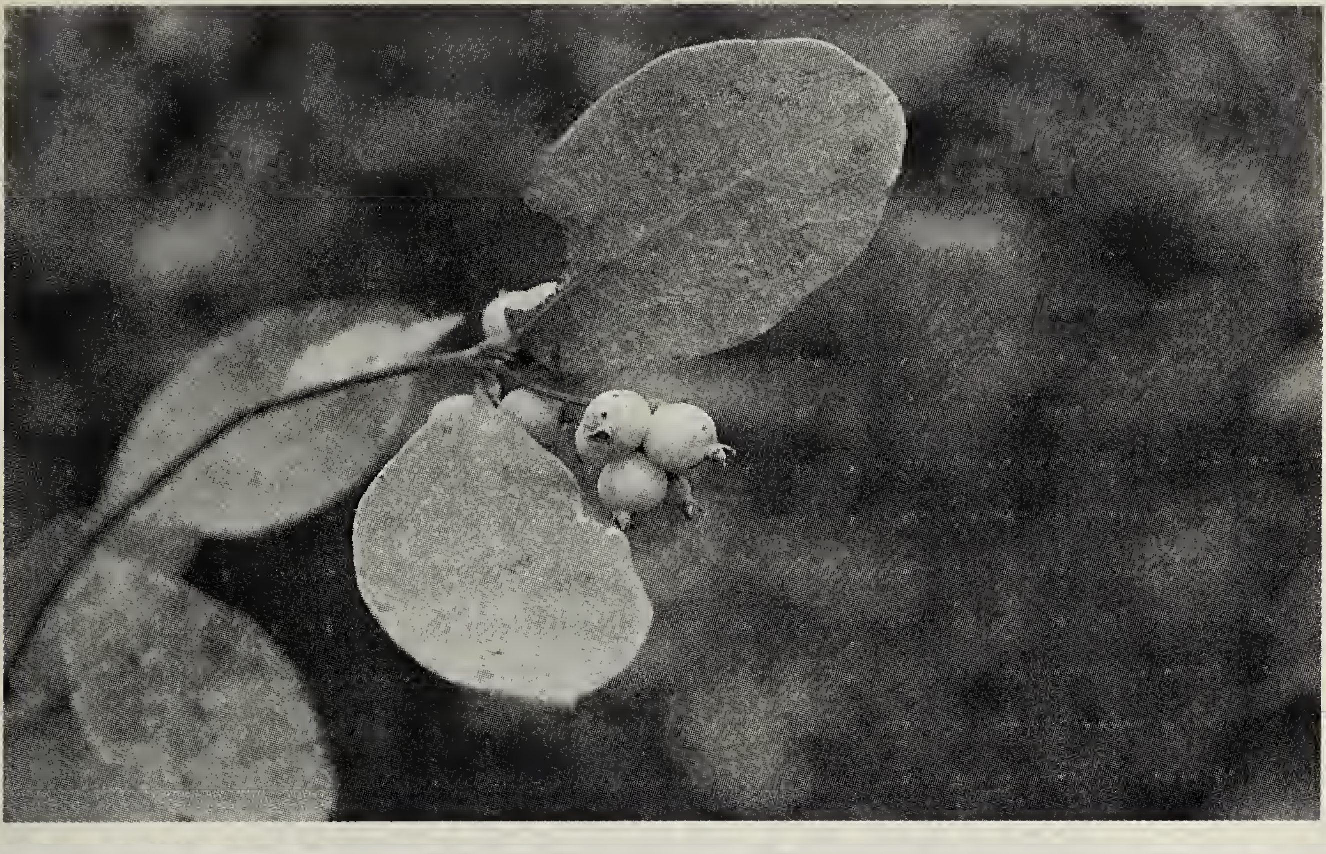

Figure 5. Western Snowberry.

quantities, and they were often mixed with other berries.[5] Perhaps their reputation for being poisonous comes from their resemblance to the truly poisonous Baneberry (*Actaea rubra* forma *neglecta*) which grows in the same habitat. **Buckbrush** or Western Snowberry (*Symphoricarpos occidentalis*) is one of the most common shrubs in the prairie region of the province. It has clusters of greenish-white berries that turn blue as they ripen and brown after being frozen (Figure 5). Its relative, Snowberry (*Symphoricarpos albus*), has larger, slightly puffy, strikingly-white berries. There are only two reports of native people eating these berries, which are generally regarded as poisonous by the native community and others.[2,5] The fruit of the **Hawthorn** (*Crataegus* species) is not very palatable, being dry and seedy, and contain substances that could be harmful to the functioning of the heart if eaten in quantity. In spite of this, hawthorns were eaten by native peoples in many of the areas where they occur. In Saskatchewan they were eaten only by the Blackfoot and not in large quantities.[3]

There are over 50 kinds of wild berries in Saskatchewan: most edible, some poisonous; some extremely abundant, others hardly ever seen; some tasty, others bitter, dry or seedy. Our most immediate source of information about how to use them is the native community, which has taken an interest in local berries for many, many generations. This article presents a fragment of the information available from this rich source of traditional knowledge.

Acknowledgements. I would like to thank Ted Leighton and Bernie Gollop for reading an early draft of this article and making a number of helpful comments.

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CALLING ALL PHOTOGRAPHERS

Dr. Ka-lu Fung, Geography Department, University of Saskatchewan, is editing a new *Atlas of Saskatchewan*. The first edition appeared in 1969. This version will be published as a book in 1999, then put out as a CD ROM and then go on the Internet.

Included are sections on birds and butterflies. Coloured photographs of selected species will be included. The reproductions will be small — in the order of 1 in. x 1 in. Credit will be given. All contributors to this project are volunteers and, so, there is no money to pay for photos. For the greatest detail with the technology being used, slides are necessary. If you wish to make one or more submissions, please send them to me. If you wish the slide returned, please enclose a stamped, self-addressed envelope. Otherwise, the slides will be given to the *Blue Jay* for future use, unless you specify otherwise. The deadline is 31 July 1997.

BIRDS: For Double-crested Cormorant, American White Pelican, Canada Goose, American Coot and Ring-billed Gull: top priority is an adult with at least one young or at a nest. For Mallard, Blue-winged Teal and Canvasback: a pair in spring plumage.

BUTTERFLIES: Alive in natural habitats: Canadian Tiger Swallowtail, Cabbage White, Clouded Sulphur, any Saskatchewan blue, any Saskatchewan fritillary (other than Variegated), any Saskatchewan crescent, Compton Tortoiseshell, Mourning Cloak, Painted Lady (Thistle Butterfly), Red Admiral, Red-spotted Purple (White Admiral), Common skipper that perches with its wings in two planes.

- Bernie Gollop, 2202 York Ave., Saskatoon, SK S7J 1J1. (Phone (306) 343-1027)

Editor's note: *Blue Jay* would also like to extend its selection of Black & White prints of birds, mammals, flowers etc. If you have some photos that are crisp, full frame and have good contrast I would really appreciate a copy.

COLD COMFORT UNDERGROUND

ROBERT WAPPLE 6-1002 Dufferin Avenue, Saskatoon, SK S7H 2C1

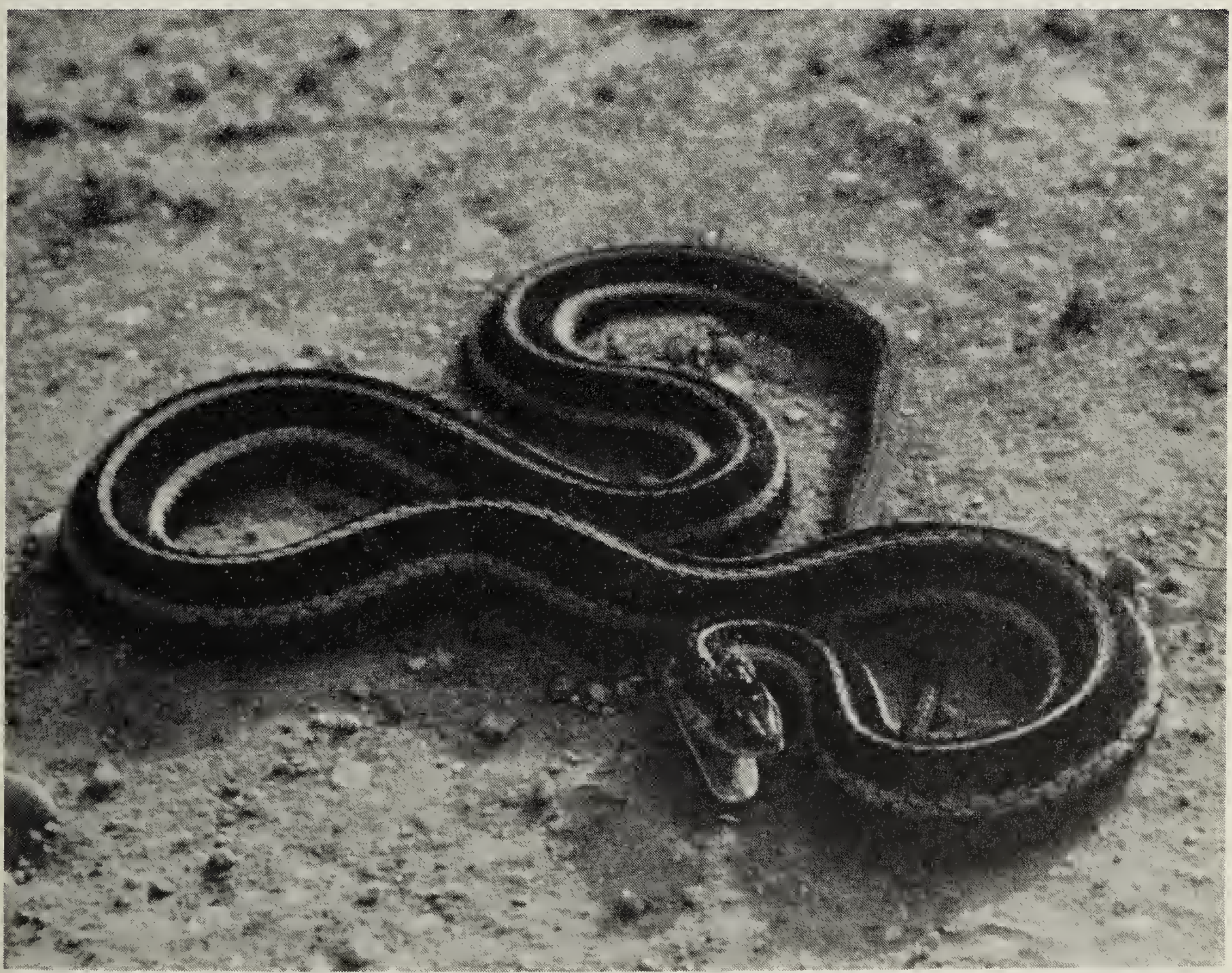
Editor's note: This article originally appeared in the Saskatoon Sun

As we approach another winter, how many of us think about how a cold-blooded animal that relies almost completely on the temperature of its surrounding environment could possibly survive such formidable conditions?

Although most cold-blooded animals evolved in more tropical climates, some have adapted to more seasonal climates. Such is the case with the red-sided garter snake.

The garter snake is the most widespread and northerly species of reptile in North America. In Saskatchewan, they range from the arid prairie in the south to the cool muskegs of the far north. Like many animals that inhabit northern latitudes, garter snakes avoid our harsh winters by moving underground to hibernate.

Garter snakes spend their summers feeding and building up carbohydrate reserves in the form of body fat which must sustain their long hibernation. In late October, snakes seek out sheltered subterranean



Garter Snake G.J. Smith

cavities, or hibernacula. Many snakes often converge into the same hibernacula. These may be located in animal burrows, hollows among tree roots, embankments, concrete masonry of man-made structures, or any other cavity below the frost line that is safe from frigid above-ground temperatures.

In some areas of their range, such as in the interlake region of south-central Manitoba between Lake Winnipeg and Lake Winnipegosis, garter snakes converge en masse into hibernacula in limestone sinkholes that may contain up to 8000 snakes!!

Near-freezing temperatures and total darkness inside the hibernacula slow the snake's metabolic rate in order to minimize the drain on stored fat reserves. A reduced metabolic rate is crucial in surviving long periods of hibernation. However, many snakes perish because they do not have enough fat reserves to sustain themselves over such a lengthy hibernation.

By late April, spring temperatures have warmed the ground sufficiently to cause the hibernating snakes to stir slowly out of their slumber. Driven by the urge to reproduce, they begin to leave their dens to perpetuate the existence of their species. Male garter snakes emerge first, often simultaneously, at large hibernacula; they can number in the thousands. The females follow shortly after, but at a staggered pace. This is crucial in maximizing breeding success because as a female leaves the den, chemical signals emitted from her body immediately attract large numbers of male snakes anxious to breed.

What follows is a frenzy of activity as single female snakes intertwine with a dozen or more males, forming what are commonly called "mating balls." Only one male in this conglomeration of snakes will successfully mate with her.

Finally, after seven months of hibernation and a dangerously exhausting mating ritual, the snakes begin to feed in order to replenish their drained fat reserves. Through this behavioural modification, the feeding and survival of each individual snake is temporarily suppressed in order to ensure reproduction and perpetuate the species.

Garter snakes then seek out marshy areas where they spend their summers feeding on amphibians, insects and other invertebrates. Female snakes that have retained fertilized eggs bear 10-30 young in late August that reach maturity the following year. Soon after, garter snakes are on the lookout for wintering dens, completing their yearly life cycle.

Bird Names
Abert, James William (1820-1897), United States Army Major in the southwest U.S. — Abert's Towhee.
Baird, Spencer Fullerton (1823-1887), Secretary of the Smithsonian Institution, first U.S. Fish Commissioner, author and active naturalist — Baird's Sparrow.

INSECTS AND OTHERS

CABBAGE WHITE — AN IMPORTANT IMPORT

BERNIE GOLLOP, 2202 York Ave., Saskatoon, SK S7J 1J1

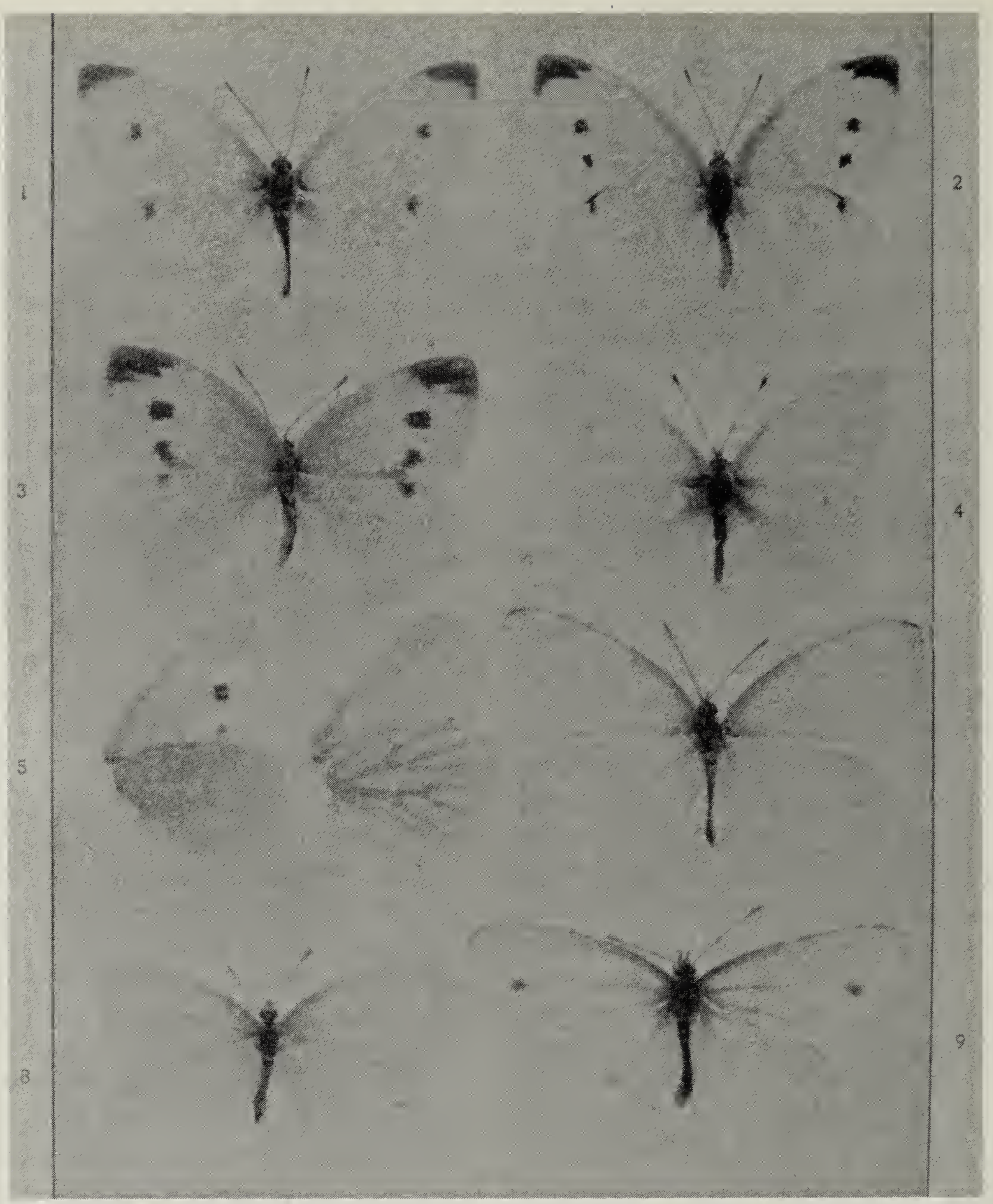
What do Cabbage Whites and House Sparrows have in common? Both are Old World introductions to North America — the butterfly arriving by accident at Quebec City in 1860, a decade after the sparrow had been deliberately released in Brooklyn, New York. Since then, without the help of travel guides, both have found their way to the west coast, the Northwest Territories and Mexico. Actually, the white is more widespread than the sparrow because it occupies a greater variety of habitats within this range. It may just be the most successful butterfly in North America, regularly showing up on more annual continent-wide counts than any other butterfly. Like Caesar, it came, it saw, it conquered.

Its scientific name is *Pieris rapae.* Pieris was a daughter of Pierus, a muse in ancient Greek mythology. Rapae is the Latin word for turnip. Obviously Linnaeus knew about this caterpillar's diet when he named it way back in 1758.

The European Cabbage Butterfly, one of its other names, already had a hefty range — Great Britain to Japan and northern Africa — before people started exporting it. "We" have now bestowed it on Hawaii, Bermuda, Australia, New Zealand and Iceland. Wherever it is found, its caterpillars have become a serious economic problem for cultivated plants of the mustard family — mustards, cabbage, cauliflower, brussels sprouts, broccoli and radishes. They also nibble on nasturtiums. Their wild-plant menu includes wild mustard, alfalfa, winter cress and peppergrass. It appears that this alien animal has prospered largely on alien plants — wild and cultivated — rather than on native plants.

Its wingspread is 35-50 mm (1.5-2 in.); its usual plumage, white with black tips on the upper forewings and a black dot on each hind wing. The sexes can be told apart by the number of dark spots on the forewing — one for him and two for her — easily visible when they perch with their wings open. Individuals produced during the short days of early spring and fall look different: they are about 10% smaller and the amount of black is further reduced. In the prairie provinces, where it has two or three broods, it may be seen from early April to mid-November, but is most common in July and August when, in years like 1994, it probably outnumbers all six native whites combined.

To find the correct plants for her progeny, the female uses mainly taste, but also sight and smell (through the antennae) to find plants with mustard oils and related compounds. She may lay one yellow-green egg on the underside of a leaf on a small plant or a cluster on larger plants, presumably depending on her appraisal of the plant's ability to support a family. During her week of life,



Cabbage White variations, images 1-5. This plate appeared in colour in a butterfly field guide published 93 years ago — How to Know the Butterflies *by J.H. and A.B. Comstock, Appleton, NY. Figures 1 and 2 are male and female of the summer form; 3 is a female from the spring brood; 4 is the spotless form, and 5 shows the underside of the wings. Images 6-9 are Mustard Whites (*Pieris napi*), also found in the prairie provinces.*

she may lay a few hundred eggs of which, on average (luckily), only two develop far enough to produce more eggs.

In about seven days the caterpillar — the Cabbage Worm — emerges and begins munching its way to maturity by eating its eggshell. The bluish-green larva is covered with a short pile and has yellow lines the length of its body, with many symmetrical dark spots. In order to grow from 3 mm (0.1 in.) to its full 20 mm (0.8 in.) in a three-week period, it has to moult its skin four times.

The last moult is quite different from the others. Instead of a larger caterpillar emerging, a pupa (chrysalis) breaks out. In preparation for this, the larva weaves a pad of silk to use as a bed and attaches a particularly strong strand around its body to hold itself in place on a fence, tree trunk or wall. (Coloured photos of larva and pupa appear in both the Audubon and eastern Peterson butterfly guides.)

If the chrysalis is part of a spring or early summer generation, it will release its butterfly in two-three weeks. If it is part of the last brood of the year, it will remain a pupa all winter and produce an adult some eight months later. It may take the new butterfly an hour to pump "blood" through its wings, stretching them to their full length. Then it may have to wait in this vulnerable position up to two hours before the wings are dry and it can fly.

The adult does not grow. Most of the male's time is spent looking for females and most of the female's time is spent feeding and looking for places to lay eggs. The suitor is often rejected by several females before a successful courtship. The pair copulates by joining the ends of their bodies and the bridegroom then demonstrates his muscle by taking his mate on brief nuptial flights.

Butterflies do not fly unless they feel right, i.e., until their bodies are warm enough, but not too warm. In summer this means that most will fly when temperatures are between 16° and 38°C (61°-100° F). Below and above this range, they huddle or relax deep in the grass. However, in the short days of spring and fall near the extremes of their flight period, many will fly when it is cooler by five or more degrees C (9° F).

In spite of all their flying, these butterflies seldom wander more than 400 m (¼ mi.) from where they emerge, although individuals have been known to fly up to 12 km (7 mi.). Males may remain in a small area for several days, roosting in the same bush on consecutive nights. These whites usually patrol within a metre (yard) of the ground and tend to move in a single direction one day and another the next.

The main reason that adults feed is to fuel their many hours of flying. They sup on the nectar of mustards, dandelion, aster, mints, wild bergamot, dogbane, red clover, cinquefoil and many other flowers. If you watch a Cabbage White, you may notice that it tends to visit the same type of flower for some time — supposedly because it learns and becomes proficient at getting nectar from that kind of plant. When it runs out of that species, it will switch to another and learn all over again.

Death attends all stages of the life cycle in the form of cold weather, rain, diseases, birds, spiders, dragonflies and other insects. While the caterpillar may be distasteful to birds because of the mustard oils it eats, it has other important enemies — small wasps which lay eggs in it. When the eggs hatch, the wasp larvae live off the caterpillar, killing it. Adults that escaped from birds can be found with beak marks on the edges of their wings.

And, finally: the Cabbage White weighs about 65 milligrams — 435 to the ounce!

WEYERHAEUSER'S NEW 20 YEAR FOREST MANAGEMENT PLAN - ENVIRONMENTAL IMPACT ASSESSMENT PROJECT INTO SECOND YEAR

WAYNE ROZNOWSKY, Weyerhaeuser Saskatchewan Ltd. Division Office,
1301 Central Avenue, Prince Albert, SK S6V 4W1

Development of a new 20 Year Forest Management Plan by Weyerhaeuser Canada's Saskatchewan Division, a $6-million project which started more than a year ago, continues toward an October 1997 deadline.

A forest management plan provides direction for managing the forest resources in a Forest Management Licence Agreement (FMLA) area. The 20 Year Forest Management Plan is the long-term plan that describes overall forest management objectives and strategies, the forest land base, forest harvesting practices, forest renewal, road requirements, environmental protection practices and requirements of the users of the forest.

In November 1995, Weyerhaeuser Canada's Saskatchewan Timberlands started the development of a new 20 Year Forest Management Plan for its 5-million hectare FMLA area. This plan is being developed earlier than required by law. However, changes in the way Weyerhaeuser manages its forest resources in this province make a new 20 Year Plan necessary. One change which has been developing rapidly over the past few years is a shift from a focus on managing only the timber resource to considering all forest resource values and uses.

In addition, the approach to future forest management activities will likely be based on ecological differences in the land, such as soils, landforms and climates, which make one area different from another. The Ecoregions of Saskatchewan map provides the framework for planning in this area. Weyerhaeuser has identified 12 distinct ecological management units on its lease area. And, unlike Weyerhaeuser's current 20 Year Plan, the new 20 Year Plan will deal with the impact on both water and land. Finally, public involvement is greatly increased in the development of this new forest management plan. This is to ensure that people who are affected by Weyerhaeuser's harvesting activities have a chance to provide their advice and comments so Weyerhaeuser's foresters can make better business decisions.

An Environmental Impact Assessment (EIA) of the new 20 Year Plan is also now required by Saskatchewan Environment and Resource Management. The EIA must address: sustainable management of all resources; use of an integrated resource management approach; and, whether biodiversity and ecosystem processed are maintained. More than a dozen different fields are being studied in the EIA — climate; geology; hydrology; site classification; archeology; current and traditional land use; socio-economics; aquatics; soils; vegetation; wildlife; riparian areas; and the impact of fires, insects, disease and parasites. Golder Associates Ltd. is the prime environmental consultant for the EIA. Golder Associates is working with other consulting firms as well as the Saskatchewan Research Council and university scientists and with computer modelling programs.

The studies themselves are based on looking at three distinct types of forest: that which was disturbed by nature (fire, disease or insects); disturbed by man (harvesting); not recently disturbed. By understanding the impacts of both natural and man-made disturbances on an area in the forest, Weyerhaeuser foresters hope to devise forest management techniques which more closely reflect natural impacts and ecological processes. The EIA studies are being carried out in all the main ecological units in the Weyerhaeuser FMLA area.

Some of the studies started last fall and winter while the rest took place in the spring and summer of 1996. During fall and winter 1996-97 the data is being analyzed and computer models based on the study data are being developed.

Public involvement is being encouraged in a number of ways. Last spring and summer, meetings were held with stakeholders throughout Weyerhaeuser's FMLA area. The Annual Operating Plan display meetings in May also provided an opportunity for public contact. As well, groups with a special interest in forest operations were invited to take part in a May workshop focusing on the EIA. That was followed by an August tour of field studies and forest operations. A number of articles and publications, including two issues of a newsletter devoted to the 20 Year Forest Management Plan/EIA, have also been used to try to raise people's awareness of the new forest management plan being developed by Weyerhaeuser. Public understanding and awareness was also the goal of a television advertising campaign and a new forest issues brochure distributed across the province in November.

While Golder Associates conducted most of the field studies, the Strategic Support Team of Saskatchewan Timberlands is directing Weyerhaeuser's efforts in the development of the new forest management plan. Weyerhaeuser's role includes doing the site classification, mapping of land uses, carrying out insect and disease studies, developing forest management strategies and taking charge of the public involvement initiatives.

Now, the timberlands focus has shifted toward the drafting of the 20 Year Forest Management Plan. The "baseline" findings of the EIA and input from public and reviewers will be applied during the development of a draft 20 Year Forest Management Plan. The public will continue to be involved in the process by reviewing the initial plan and study results before a revised plan is finally submitted.

Completion of the plan and operating guideline documents is scheduled for the start of the summer of 1997. The 20 Year Forest Management Plan and Environmental Impact Statement (EIS) — which is the document created from the Environmental Impact Assessment — are to be presented to Saskatchewan Environment and Resource Management during the fall of 1997. It is expected any public review of the completed EIS conducted by SERM would take place in early 1998 and be followed by a decision on approval of the new 20 Year Forest Management Plan.

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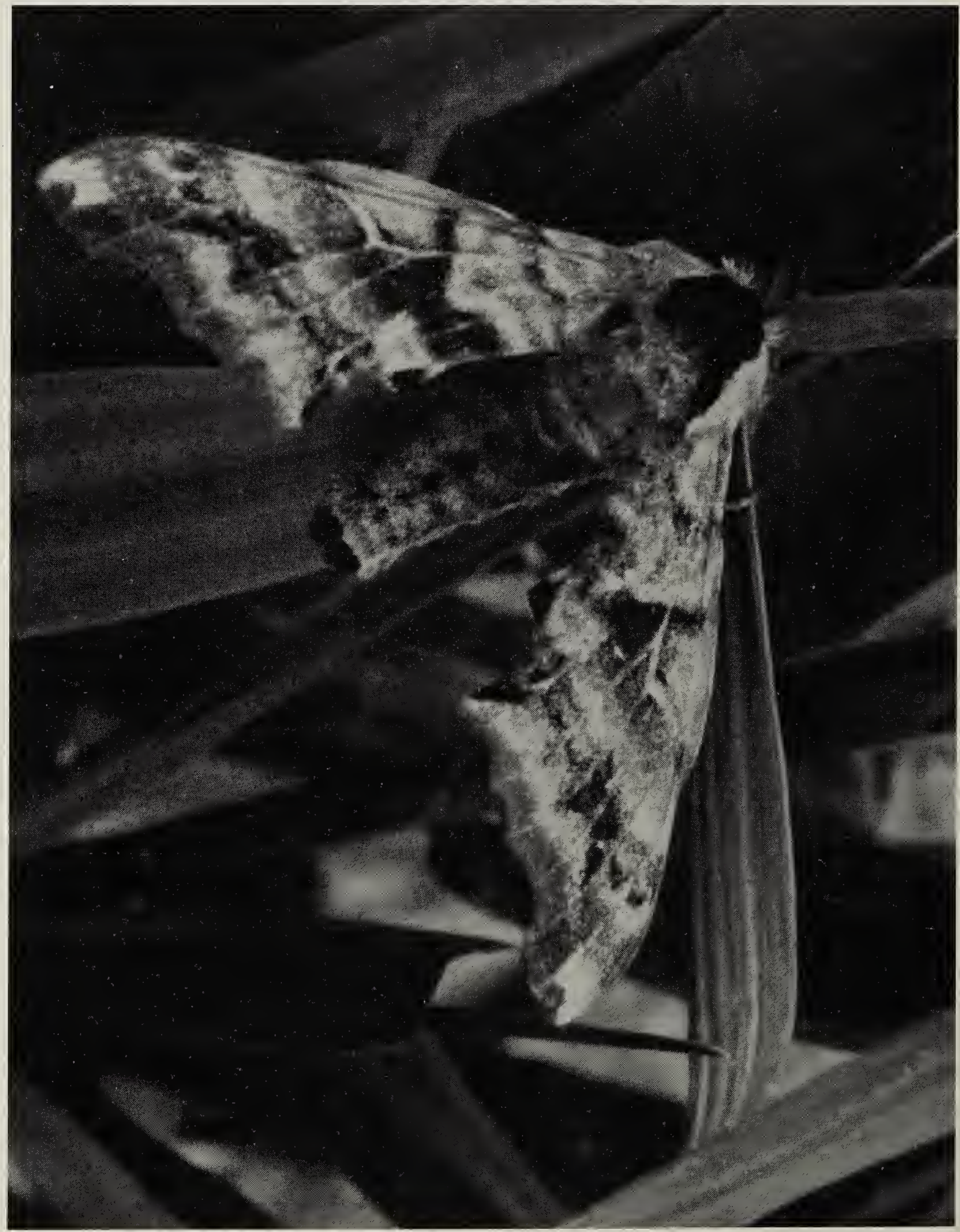
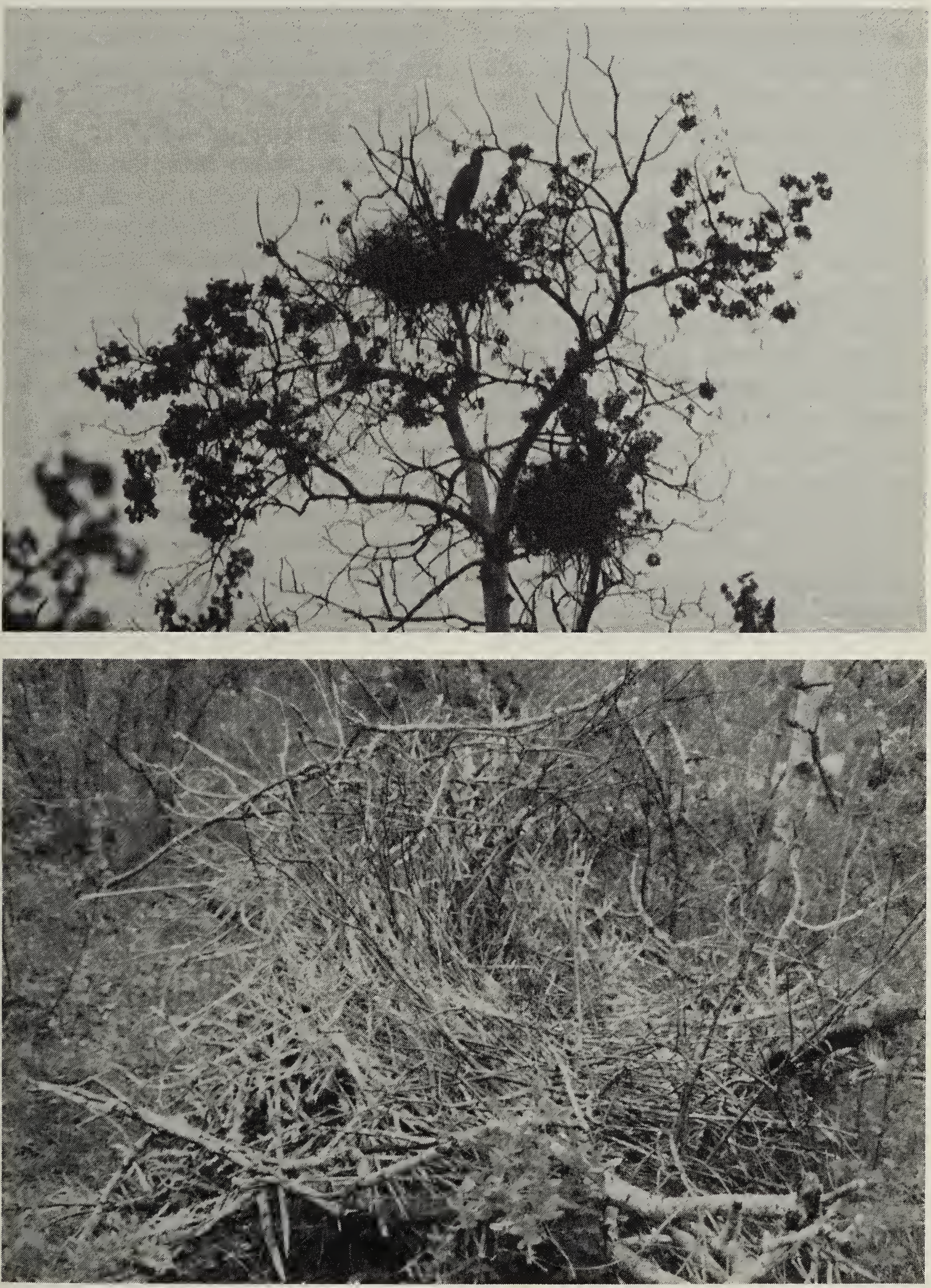


Cerisy's Sphinx Moth *Wayne C. Harris*

NOTES AND LETTERS

CUTARM HERONRY

The Cutarm Creek heronry is located on private property about two miles west of the village of Gerald, Saskatchewan, half a mile east of the IMC-K2 potash mine. There are about 25 nests in various stages of use or abandonment, though leaf growth and windfalls made it difficult



Cutarm Heronry *Anthony J. Hruska*

to count nests accurately when I visited on 2 June 1996 (Figure 1). We assumed hatching was in progress, judging from the number of egg shells at the base of the trees. The parents were quite excited and cautiously returned quite soon after being flushed off the nests. The nests are large and heavy, and some former nests have fallen (Figure 2), as the supporting branches of the mature aspen trees have collapsed under the weight of the nests. Each year the herons reline old nests that have survived the winter.

The Great Blue Heron, *Ardea herodias,* is the largest Canadian member of the heron family. It haunts shallow waters, such as the Cutarm Creek and adjacent sloughs and ponds, where it feeds on frogs, snakes, small fish, etc. It will stand motionless for a long time, then suddenly bend its neck to strike some frog or other edible morsel.

Fifty years ago I did not know what a heron looked like. It is only in recent years that this easily recognized species, which flies with its neck folded back, has been seen in the Gerald area.

- ANTHONY J. HRUSKA, Box 38, Gerald, SK S0A 1B0

OF BOOKS AND BIRDS

Book tours aren't a lot of fun, and "doing the Canadian West" can be gruelling — a plane a day, a different bed each night, one interview after another, the book reading, the signing, and you're lucky to get lunch. So it was a rare surprise when I hit Saskatoon in mid-October to find that the publicist, Jean Gordon, and Carol Blenkin of CFQC had arranged a special excursion for me. Knowing of my interest in birds, they'd planned Carol's interview early so all three of us could go off with Roy John of the *Blue Jay* in search of the migrating whooping cranes.

It wasn't warm, but the sky was clear and the colours were intense — brilliant gold, vivid blue, splashes of orange and red. There was a parka for me, and an extra pair of binoculars. Carol and Jean had made an excellent picnic lunch, and we sat in the car eating it while Roy, our guide, drove along the back roads searching for the cranes. White, bigger than a swan, smaller than a cow, and more than one of them — that's what we were looking for. There were several false alarms, and then, a couple of fields away from the road, there they were — seven adults and one brown juvenile, calmly grazing. Two birds we assumed were the parents of the youngster kept a sharp eye on us, but we were far enough away to pose no threat. We had a long look through binoculars and scope, and then — as if by arrangement — they put on a slow but magic dance — jumping up into the air, wings spread, one after the other.

It made my book tour!

- MARGARET ATWOOD, Suite 900, 481 University Ave., Toronto, ON M5G 2E9

NESTBOXES AND THE DECLINE OF BURROWING OWLS

The continued decline of the burrowing owl "for about 20 years," documented by Houston et al.,[1] is distressing indeed, but the decline began even longer ago, before pesticides like carbofuran were in use.[2] Certainly, carbofurans are detrimental to the owls,[1,3] but there are other factors that need to be taken into consideration in developing a management plan for this species. Habitat loss and fragmentation is one of the most important factors, however, I believe that ecological change resulting from the decimation of coyotes in the 1960s, and the resultant explosion of the red fox population, was also an important factor.[2] I recall that during the mid 1960s there were several traditional nesting sites of burrowing owls on small patches of prairie within about 6 km of Luseland (west central region). None of these remained by 1970; some were lost due to the breaking of the prairie, but I remember one burrow that was taken over by foxes. I'm certain that the owlets were easy prey for foxes, and I'm quite certain that they played a significant role in their decline in this region. I suggest that we need to bring back some ecological balance by bringing back the coyote, which should eliminate the red fox, and bringing back the Richardson's ground squirrel and some badgers to make some real burrows, before we resort to artificial homes.

1. HOUSTON, C.S., D.G. HJERTAAS, AND R.L. SCOTT. 1996. Experience with burrowing owl nest-boxes in Saskatchewan, with comment on decreasing range. *Blue Jay* 54:(3) 136-140.

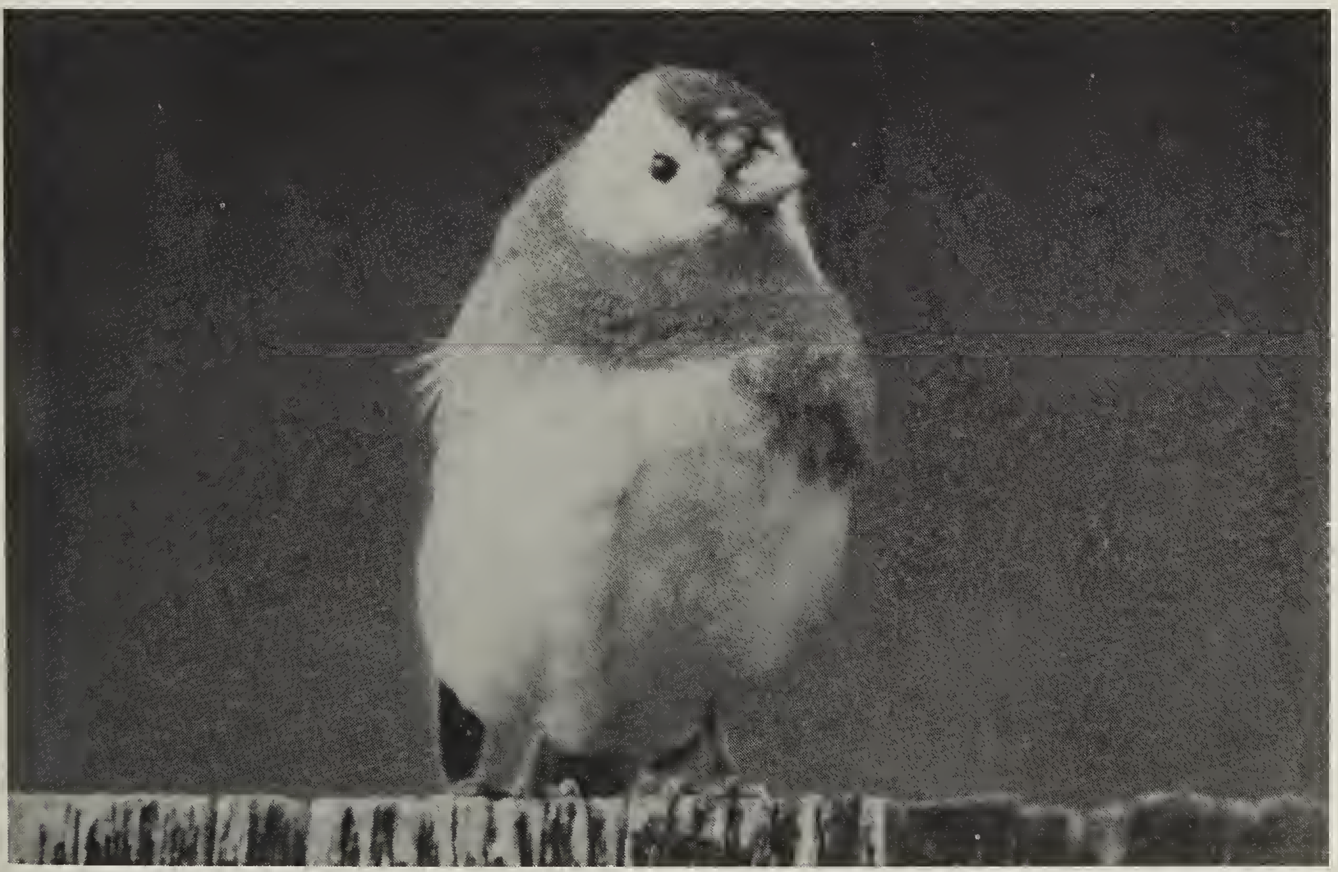
2. FINLEY, K. The Red Fox invasion and changes in wildlife populations in west central Saskatchewan since the 1960s. *Blue Jay* 54(4): 206.

3. JAMES, P.C., AND G.A. FOX 1987. Effects of some pesticides on productivity of burrowing owls. *Blue Jay* 45: 65-71.

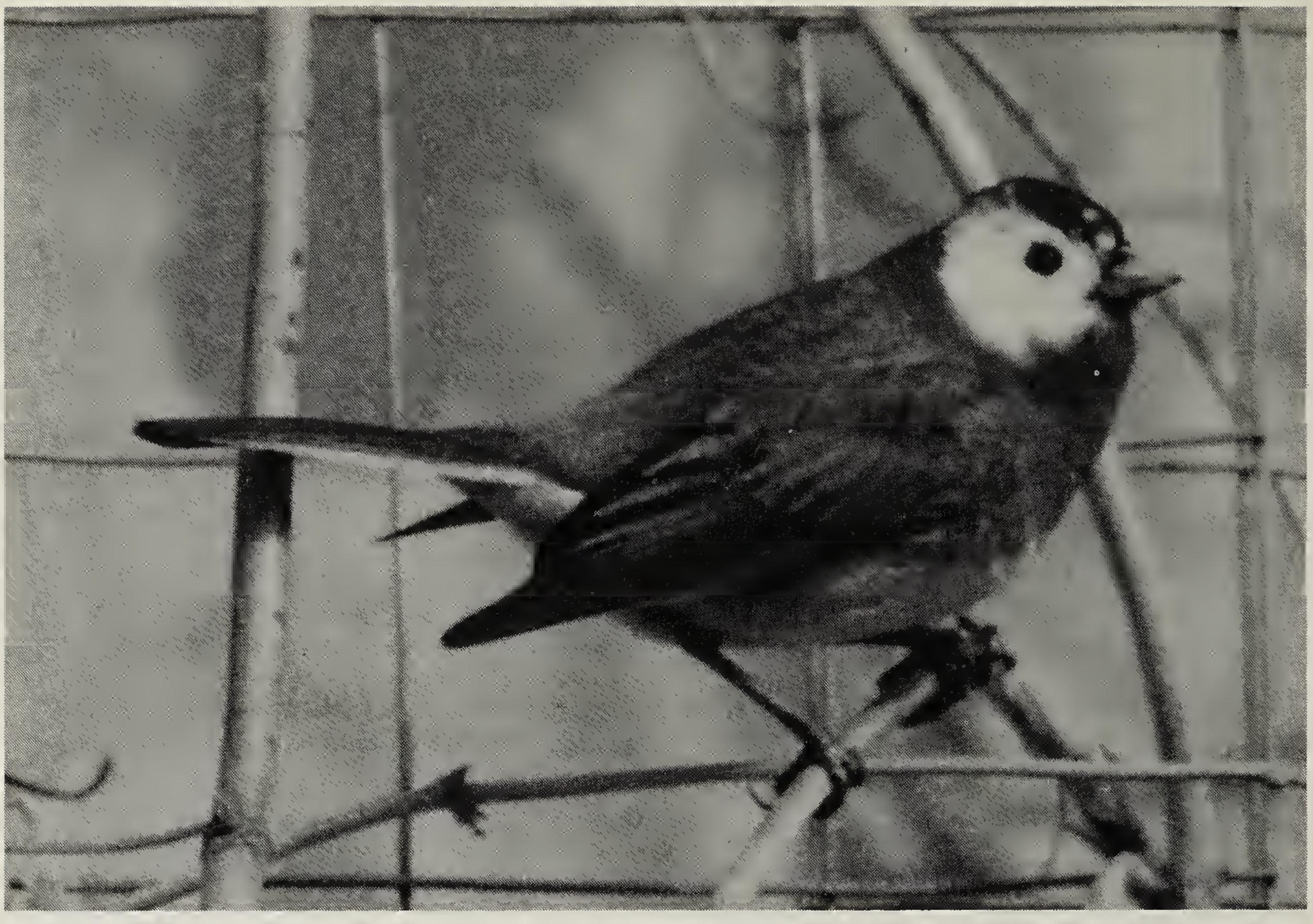
- K. FINLEY, Box 8, Luseland, SK S0L 2A0

FAVOURITE SPRING MIGRATION OBSERVATION

On 23 April 1996 as I was returning home from work, I saw a strange looking bird in my backyard. It was in a group of normal looking dark-eyed Juncos, but the BIG EYE RINGS made it look like a tame bird I had seen in a pet store. I ran into the house, got my camera and took a few pictures until it flew away with the rest of the flock. When I turned around to go back into the house, on



Dark-eyed Junco *Bob Green*



Dark-eyed Junco *Bob Green*

the far side of the yard, was another bird about the same size as the first bird, except it was an equal combination of white and grey. I managed to get a few pictures of this second bird, but I couldn't get as close as I could to the first one. I phoned a member of the Natural History Society to see if he could come over and confirm my observations; he was busy, but said, "If you can see the outside tail feathers when it flies it is a Dark-Eyed Junco, but partial albino." I checked the next time they came back to the yard and Yes, the bird with the Big Eye Rings had the white tail feather showing when it flew, but the other had too much white to see the white on the tail feathers. The weather turned stormy the next day and I never saw them again, although I checked all the flocks of Juncos, as they passed through our yard, but they all looked normal, even in the fall migration.

Two partial albino dark-eyed Juncos in my backyard at the same time — Can Birding Get Any Better Than That ???

- BOB GREEN, 1521 Avenue E North, Saskatoon, SK S7L 1T9

ANOTHER UNUSUAL LOGGERHEAD SHRIKE NESTING LOCATION

I am writing this letter in response to the article "An Unusual Loggerhead Shrike Nest Location," *Blue Jay* 54(2), June 1996 wherein Hendrik Kiliaan reported a nest site in a pile of tangled chain-link fencing. The author reported that this is "possibly the first observation of a shrike nest in an 'artificial' location." This letter documents another unusual nest sighting for Loggerhead Shrikes.

As an employee of the Environmental Affairs department of TransGas Limited, one of my responsibilities is to provide assistance to company staff on matters regarding the environment. In early 1996 I was contacted by Howard Harder, an operator at the TransGas compressor station near Hatton, in southwest Saskatchewan. Howard was aware of concerns regarding declining Loggerhead Shrike populations and, knowing that shrikes preferred to nest in shrubs and trees, he was inquiring what species he should plant around the compressor station to encourage shrike nesting in their natural habitat.

As it turns out, Loggerhead Shrikes were nesting in the cable trays attached to the buildings at the compressor station. Cable trays are long, three-sided, perforated metal structures, similar to eavestroughing, that enclose electrical cables. The cable trays are supported by vertical poles extending approximately 2 m from the ground. Although Loggerhead Shrikes nested successfully in the cable trays in the previous year, there is always the potential for nest failure due to required maintenance and station operation activities. Howard's intention was to provide natural nesting habitat in the vicinity of the compressor station, and thereby reduce the chance of the birds using the "artificial" structure.

Shrubs were obtained from the PFRA Shelterbelt Centre in Indian Head. In 1996, TransGas staff from the compressor station planted a total of 300 plants: 100 thorny buffaloberry (*Shepherdia argentea)* and 200 hawthorne (*Crataegus spp.*) shrubs. It will take several years before these shrubs will be mature enough to offer potential nesting locations for Loggerhead Shrikes.

In 1997, an additional 300 shrubs will be planted at the Hatton compressor station site offering a greater number of potential nest sites in the future. We will be monitoring the Hatton compressor station site to determine whether shrikes continue to use the cable trays or are selecting natural nesting sites in the planted shrubs.

- KERRY HANLEY, Environmental Affairs, TransGas Limited, 1945 Hamilton Street, Regina, SK S4P 2C7

THE OSPREY AND THE GOOSE

I was visiting relatives who told me this story about friends of theirs that have a cabin at Windermere Lake. An Osprey had a nest in the top branches of a tree quite close to the Windermere cabin. The tree was getting old and, afraid it would fall on the cabin, they contacted the Wildlife Federation to see what they should do. They were advised to cut the top of the tree and lower it to the ground. Men were hired to do this job, but they were afraid to climb the tree because it was too dangerous, so they cut it down. Again the cabin owners contacted the Wildlife Federation who advised them to build a tower and replace the nest.

The next spring a goose flew over, saw the nest and claimed it for herself, forcing the Osprey to watch the proceedings. When the goslings hatched the mother flew out of the nest and they all tumbled out after her. Then the osprey took over and raised her young. They still continue this way from year to year, geese first, followed by Ospreys.

- MARJORIE MILLER, Box 426, Saltcoats, SK S0A 3R0

CAPTURING A BEAVER

It is my habit to walk around Wascana Park almost every morning. The occasion I am going to tell you about is late fall and the lake has been frozen over for a week. I see two tree stumps that I have not noticed before, obviously the work of a Beaver. I have always thought of myself as being very observant; how could I have missed seeing those stumps before? They must have been cut out before the lake froze over, and I have somehow missed them.

Arriving in the same area the next morning, I cannot believe my eyes ... another stump! This time the tree is still where it fell. There must be a Beaver here. I go down to the lake, and sure enough, there is a hole in the ice. Aha! I am going to get a picture of this Beaver. I will come back tonight with my camera and flash and catch him in the act. On looking around, I see that he has been gnawing on a couple more poplars, but he must have been scared off as only the bark has been chewed off.

Night falls. My wife and I drive to the area and park, with lights turned off. We sit and wait. But no Beaver!

When I come back the following morning, I see that more small trees have been cut and hauled away. I know that the Beaver is still around, so we shall try for pictures again tonight.

When we drive into the parking lot this time, my wife spots the Beaver working on one of the trees from which the bark had been chewed off the night before. The bottoms of these trees are black. The park people have apparently painted them with tar to try and save them. But the tar does not deter the Beaver! I leave the car lights shining on him and get out to approach the Beaver. I stop about 12 feet away and take two pictures. Then — wouldn't you know it — I am out of film! I go back to the car to watch. At the rate the Beaver is working, he will soon clear out this area. We must stop him.

We drive home to get a large metal garbage can. In the past, I have caught a Porcupine by laying the can on its side and herding the animal in, then putting the lid on and transporting the Porcupine safely out of town.

When we get back to the "logging site," the Beaver is still working on the same tree. My plan is to walk up to him while he is blinded by the car lights. But the Beaver begins to run. I chase him down the hill, then up and over another hill, trying to put the garbage can over him. Anyone watching would think that I am out of my mind.

The Beaver must have got tired — I certainly have! I finally get him covered. I sit on top of the can to regain my breath and composure. Here I am sitting on top of a garbage can in the park in the middle of the night! I can't let the Beaver go or he will continue his "logging operations." My wife and I finally get the lid under the can, flip the can over and tie down the lid, with the Beaver inside.

When I get my prize home, I phone the Conservation Officer to let him worry about what to do with it. No luck — he has taken his wife out for the evening! These officers are like police officers — never around when you need them! Next, I phone the Wascana Park Naturalist to ask what he wants done with his beaver. I have a hard time convincing him that I have actually caught a Beaver in such an unorthodox manner, but he finally tells me that he will send someone over in the morning. He is true to his word. My wife will have to wait another year for a fur coat!

- KEITH BARR, 40 Richardson Crescent,
Regina SK S4S 4J3

ROAD KILLS OF MIGRATING GARTER SNAKES AT THE PAS, MANITOBA

On 1 September 1991, during a trip to the Landry Lake area of Manitoba to collect plant specimens, some observations worth recording were made on the dead and dying snakes found on the highway.

In the course of travelling between Frog Creek and Landry Lake, a distance of some 20 miles, I noted 32 dead Garter Snakes on the gravel road. In the remaining 10-mile stretch of road from the railway track where Highway 287 and Moose Lake Road meet, another 10 Garter Snakes were found on the road to The Pas. Thus a total of 42 crushed, dead snakes were counted in a 48-km stretch of road. This area, near The Pas Airport, has long been known as a Garter Snake winter denning area. The limestone dens have never been found, but were reportedly known to the late Fred Kowalchuk, who ran a summer store on the beach area for many years. The area between Landry Lake and Frog Creek, on the Moose Lake Road, is hereby reported for the first time as a likely winter snake denning area.

The dead snakes were on the smaller side, perhaps averaging 18 inches. Only two were juveniles — one very thin and 14 inches long, and the other only as thick as a pencil and perhaps a foot long.

Two of the less damaged, road-killed snakes were repeatedly washed in rain water until blood ceased to appear in the wash water. This removed all the grit and gravel from the wounds. The two specimens plus the 14-inch snake have been preserved in liquid and added to the writer's collection. Local road kills of Garter Snakes by the airport, in particular, have been going on for over 50 years now *(anecdotal information obtained by interviewing local residents)*. In this time, vast numbers of snakes have been killed by the passing traffic. Snake crossings are concentrated in the two-mile stretch of highway 287 near the airport.

If signs alerting drivers were erected and the traffic slowed down, it is likely that the carnage would decrease. Since this is the only snake species we have this far north in the province, some efforts to inform the public of the value of snakes would also help. I suggest that everyone interested in snake conservation at this site should write:

The Mayor of The Pas,
The Mayor's Office,
Town Hall,
The Pas, Manitoba

- WALTER KRIVDA, P.O. Box 864, The Pas, MB R9A 1K8

A NORTHERN HAWK OWL AT MY HOME — A REGINA FIRST

At 8:15 pm on Wednesday, 29 May 1996, in front of my Regina home, I heard a House Sparrow (*Passer domesticus*) scolding as they do when they discover a predator. I saw a large bird perched up about 40 feet in a 50-foot Northwestern Poplar in my neighbour's yard, near the boundary line of our two properties. I got my 10 x 40 Zeiss binoculars from the house and returned to where I could focus on the bird. I saw an owl with a round head and a rather long tail sitting with its back to me. When it heard me it turned its head 90 degrees to look at me and then flew south. As it did so I noted that the long tail, which it spread at the start of its flight, was barred, thus confirming I had seen a Northern Hawk Owl (*Surnia ulula*).

I checked *Birds of Regina* (revised ed., 1980, Nature Saskatchewan Special Publication #12) by Margaret Belcher and noted that it was not mentioned. None of the knowledgeable birders I consulted had seen one in the city in the subsequent 16 years. I believe that this is the first record of a Northern Hawk Owl for Regina. I have seen the species before at Fort Qu'Appelle and in the Prince Albert region.

- FRANK H. BRAZIER, 2657 Cameron Street, Regina, SK S4T 2W5

EVENING GROSBEAKS ATTRACTED TO VEHICLES

On 11 June 1995, I was running my annual Breeding Bird Survey along the Bird River route in southeastern Manitoba. Breeding Bird Surveys (BBS's) consist of a series of 50 three-minute stops at 0.8-kilometre intervals along a predetermined route, starting half an hour before sunrise. At Stop No. 29, shortly after I stopped my van, a flock of six male Evening Grosbeaks flew into a roadside sapling nearby, then flew underneath the van, where they foraged on the gravel road. This brought to mind two similar incidents, two years earlier. At one stop on the same BBS route on 19 June 1993, a single Evening Grosbeak hopped under my car after almost colliding with me as I stood alongside. The following day, an Evening Grosbeak also hopped under my car at a stop on the Springer Lake BBS.

Both the Bird River and Springer Lake BBS routes are in sparsely populated, mixed-forest regions in or near Nopiming Provincial Park. What would induce this odd behaviour in Evening Grosbeaks? In common with some other *fringillid* species, especially crossbills, Evening Grosbeaks are noted for their appetite for salt.[1,3,4,6,7] In one field study, Fraser documented wildlife seen visiting natural sodium-rich springs and salt-contaminated roadside pools in northern Ontario.[2] Evening Grosbeaks represented 157 of 270 observations (58%) of birds at roadside pools, the other two common visitors being Purple Finches and Pine Siskins.

In my home town of Pinawa, Evening Grosbeaks are common feeder users. They frequently visit driveways, often foraging near or underneath parked vehicles, where they appear to pick up sand and/or salt. Some years ago, Evening Grosbeaks repeatedly visited a driveway where salt had been dumped after the home's occupants had used a salt-ice mixture for ice-cream making![5] I suggest that the birds I saw on the surveys had become habituated to finding salt near vehicles in driveways in winter. Subsequently, in the early summer, the arrival of a vehicle along a gravel road in their forest habitat was sufficient to trigger an immediate search for salt.

Acknowledgements. I thank Robert W. Nero and Rudolf F. Koes for information and helpful comments.

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3. LAWRENCE, L. de K. 1980. To whom the wilderness speaks. McGraw-Hill Ryerson Ltd., Toronto. 180pp.

4. NERO, R.W. 1983. Ravens eating salt? *Blue Jay* 41:211-212.

5. TAYLOR, P. 1983. Wings along the Winnipeg: the birds of the Pinawa - Lac du Bonnet region, Manitoba. Eco Series No. 2, Manitoba Naturalists Society, Winnipeg.

6. TOZER, R. 1994. Red Crossbills feeding at mineral sources. *Ontario Birds* 12:102-108.

7. WILLOUGHBY, E.J. 1971. Drinking responses of the Red Crossbill *(Loxia curvirostra)* to solutions of NaCl, $MgCl_2$, and $CaCl_2$. *The Auk* 88:828-838.

- PETER TAYLOR, Box 597, Pinawa, MB R0E 1L0

DUTCH ELM DISEASE — PRO AND CON

The article “The Native Elm Bark Beetle: Primary Vector of Dutch Elm Disease in Saskatchewan” in the September 1996 issue of the *Blue Jay* was somewhat inappropriate for a journal of natural history and conservation. Once again it appears that when we find a way to disrupt our environment, this time by the introduction of the fungus *Ceratocystis ulmi* to North America, we feel justified in using any means necessary to correct our mistake. Our scapegoat is the native Elm Bark Beetle, and our solution is the “community-wide” application of the pesticide chlorpyriphos (Dursban) to effect its eradication.

In a recent hazard ranking of pesticides used in California, chlorpyriphos was ranked in the “top ten” for negative impact on human health and natural resources.[1] As for spraying by licensed applicators, if it’s the same outfit that sprays weed killer on my neighbour’s lawn on the windiest days of summer, then licensing is of little consolation. What’s worse is Dursban is available at so-called garden centres, and once the word is out, every weekend zealot will be spraying his/her trees to their heart’s delight.

The experience of communities in the northeastern United States during the 1950s and 1960s demonstrated that a committed program of pruning and tree removal was far more successful than spraying pesticides. Spraying resulted only in the indiscriminate obliteration of all insects, and the poisoning of many bird species in the process.

While the loss of native elms will have a significant impact on rural and urban landscapes (and property values), we are not discussing the extinction of the American Elm. Resistant seedlings have survived the disease in eastern North America, and their genetic material will be the source for a new population of elm trees.

An integrated program of tree sanitation, pruning restrictions, and a ban on firewood transportation will delay the spread of the disease and give us time to develop a program of tree replacement in urban settings, and time to contemplate the folly of monoculture boulevards. It will also give us time to dust off those old copies of *Silent Spring*, and to put things into perspective.

1. NEWMAN, A. 1995. Ranking pesticides by environmental impact. *Environ. Sci. Technol.* 29:324A-326A.

- CRAIG SALISBURY, 2205 Ewart Avenue, Saskatoon, SK S7J 1Y1

REPLY

I am writing in response to Craig Salisbury’s concerns about the use of the pesticide chlorpyriphos (Dursban Turf) to fight Dutch elm disease as described in “The Native Elm Bark Beetle: Primary Vector of Dutch

Elm Disease in Saskatchewan" (September 1996 *Blue Jay.*)

According to the 1995 *Saskatchewan Agriculture and Food Pesticide Ruling Handbook,* Dursban Turf has a medium oral and a medium to low dermal toxicity value, with a LD50 value of 160. The chemical is applied to the bottom couple of feet of healthy American elms using a low pressure applicator, usually a backpack sprayer with a hand wand. The pesticide remains effective for a period of two years if spraying is carried out in the fall.

Salisbury is correct that the chemical should only be applied on calm days (winds of less than 5 to 8 kms/hr). Because spraying is done by hand on the base of the tree, drifting is of minimal concern. As with all pesticides, however, precautions do need to be taken. Applicators should wear protective clothing, masks, and eye shields.

Once the pesticide organically bonds, after about an hour, a toxic effect can only occur through ingestion of a significant amount of the bark that has been sprayed. Used properly, basal spraying will not, as Salisbury claims, cause the "obliteration of all insects, and the poisoning of many bird species." The chemical will only kill the few insects that bore through the bark of elm trees.

In earlier uses of chlorpyriphos for control of the elm bark beetle, the crown of the tree or sometimes even the whole tree was sprayed. It was this more hazardous, high pressure spraying that has been found to be unnecessary.

Manitoba has one of the most successful Dutch elm disease programs in North America. They have been fighting the disease since the 1970s and have managed to keep their urban tree losses to under 2.5%. This has been achieved through an integrated, comprehensive management program that includes such strategies as pruning of dying branches from elms, an annual pruning ban, prompt removal of diseased trees, and firewood checks. Basal spraying is a key component of this program, reducing the elm bark beetle population by more than 98%. All the strategies available need to be used to keep from losing our elms. A number of municipalities in Saskatchewan, including Regina, are already basal spraying as part of their Dutch elm disease management program.

Salisbury raises particular objection to the "community-wide" application of Dursban recommended in the article. To clarify this point, individual home owners should *not* have their elms sprayed, unless their area has undertaken a community-wide basal spraying program. Otherwise, the pesticide will kill the elm bark beetles on the elms sprayed, but will not prevent beetles from unsprayed trees on adjoining properties from flying to the treated elms. A more diluted form of chlorpyriphos is available to individual home owners to spray on their own trees, although it is recommended that they hire a licensed applicator.

Dutch elm disease is well-established in eastern Saskatchewan and has the potential to destroy most of the province's majestic American elms. If that happens, it would be 60 to 80 years before new trees grow to the same size as those lost. At risk are most of the mature boulevard trees that form lush green canopies over our urban streets.

In winter, birds such as woodpeckers, chickadees, nuthatches and brown creepers forage for insects and larvae in the rough bark of elm trees. Several species of butterflies also depend on the elms for feeding during their caterpillar stage. The colourful Baltimore Orioles are among the birds that look to elms for nesting sites. The loss of our elm trees would mean the loss of a critical habitat, impacting on urban wildlife, such as birds and butterflies. The effect on the wildlife population would be greatest in a city like Regina where the urban forest is made up of at least 50% elms.

- ELENA SCHACHERL, Administrator, Dutch Elm Disease Management Program, 112 Research Drive, Saskatoon, SK S7K 2H6

NATURE LIBRARY

BIRD SONG. IDENTIFICATION MADE EASY

ERNIE JARDINE. 1996. Natural Heritage/ Natural History Inc., Toronto. $14.95 paper.

As a birder who uses ears as much as eyes, I'm always looking for materials to sharpen my skills. I suspect, unfortunately, that this book sounds more useful than it may be. But since, in winter, many of the birds on Jardine's basic songster list are a continent away from Canada, testing his approach now cannot do it justice. It deserves to be field-tested.

Jardine's premise is laudable. He decided it must be possible to organize common songs in such a way that people new to birdwatching could identify species by song, without having to see them first. For naming warblers haunting the tops of tall trees, this method could be superb.

Jardine first developed a list of 25-30 of the most common eastern birds (later increasing this to 100). He divided their songs, those most commonly heard and, in some cases, alternatives as well, into four main categories: very short (single-, two- and three-note); repeated notes (single, twos, threes); short songs with varying notes (several varying or with distinct repetition); long songs with varying notes (many varying or as short, variable phrases). A "bird-hearer" begins by asking "Is this a very short song or a series of repeated notes?" If neither, then it is either a short song with varying notes or a long song with varying notes. This "keying" process is designed to get aspiring bird "detectives" into the right section. I've talked with birdwatchers who found enough fun in this "game" that they didn't let a few mistakes worry them.

For almost every species, Jardine gives visual representation of song or songs, using special symbols, as well as verbal description with bold and italic highlighting of important elements. He cross references in a section on habitat types. "Going for a Walk" focuses on what to expect along a specified route, where to look and what to listen for. A little livelier style would have made this chapter stand out more and be more fun to use.

He finishes by describing the songs of another 25 less common eastern species, and gives an overview of all 125 songs, organized according to habitat. This section and the earlier one based on habitat are quite useful organizing tools for the species information and help sort out some of the confusion created where similar words describe different songs.

Jardine's focus on eastern birds reduces the book's usefulness for Saskatchewan. And, even there, his 100 species obviously miss a good many that will be singing out for identification. I, for one, find his song categories rather confusing — the distinctions between two-note songs and two notes repeated, between a short song containing a distinct repeated note and two or three notes repeated, etc. Perhaps after more experience with the system, I might better sense its usefulness. Its strong point, I think, is its emphasis on categorizing and comparing and analyzing — very useful for learning many things, including bird songs. Its greatest value may turn out to be for experienced birders helping others to learn bird songs. It would be even more useful if given a more western flavour.

The text could use tighter editing; repetition has its purpose, but there seems more than enough here. And, for some reason, though no pages are missing, my copy has five duplicate pages.

I look forward to warmer days and a group of birders to try out the system.

- Reviewed by *Mary Gilliland*, 902 University Drive, Saskatoon, SK S7N 0K1

EAGLES

DAVID JONES. 1996. Whitecap Books, Vancouver/Toronto. 110 pp., $24.95 cloth.

This is the quintessential coffee table book. Its large, square format (28 x 28 cm) accommodates some 60 full colour photographs plus additional sketches and paintings distributed, with accompanying descriptive captions, across its 110 pages. These share space with a conversational but informative text surrounded by ample white margins, which enhance the visual impact.

Author David Jones, a Vancouver-based zoologist-turned-nature writer, has selected from the work of twelve accomplished photographers to illustrate the life history of eagles. Nine photographs are by Wayne Lynch, a Saskatchewan photographer whose work is familiar to many of us through his annual engagement calendars and other publications.

The "Eagles" of the title refers to North American eagles, and the book makes only passing reference to species other than the Bald Eagle and the Golden Eagle.

The book is a visual celebration of eagles, It is not a textbook or a field guide. The strength of the book lies in the details and clarity of the photographs and the mood they convey.

The selection of images is well balanced between the various activities of an eagle (although biased towards Bald Eagles). I would like to have seen more pictures of soaring eagles, well lit, and with the field marks clearly showing. After all, except for perched birds, this is how most of us see eagles, and soaring is what eagles do best.

The illustrations and text are divided into four sections. An introduction involves the reader in the emotional impact of the first encounter with an eagle by the writer as a young boy; this leads into a short essay on the place of the eagle in our lives, its origin, distribution and survival in a world seemingly intent on destroying its habitat.

Next, a section on the eagle as hunter begins the account of its life cycle. In the text we learn briefly about the diet, range, and hunting strategy of this magnificent bird, but the action shots of the fierce determination of the eagle are what catch the eye and quicken our interest.

Courting, nesting, and raising the young are the substance of the third section. Again the photographs do not disappoint. From the precarious cliff-side nest, to the care and feeding of the young, to the awkward comical appearance of a downy eaglet, the photographs capture our attention and respect.

The final section provides some insight in to problems faced by the fledgling as it sets out to establish its place in the uncertain and unforgiving natural world.

The strength of this book lies in the images. It is clearly not a detailed natural history of Bald and Golden Eagles, and the reader should not expect it to be. However, the text and captions to the photographs provide a useful outline, and tie the images together in a memorable way.

Plumage differences between the species and between adult and immature birds are briefly noted, but no attempt is made to illustrate the differences systematically. For the birder who wants to learn how to distinguish an immature Bald Eagle from a Golden Eagle this may be considered a serious shortcoming, but, to be fair, such detailed treatment is beyond the scope of this book. In one respect this can even be regarded as a stimulating challenge. More than one photograph shows an eagle that is not identified; determining the species requires a close examination of the details — but the clues are there in the text and elsewhere.

The eagle is a symbol for us because of its size, strength, and regal bearing — and at close proximity these are daunting features. But set the eagle at a distance in its environment, as some of the photographs do, and we get a feeling for how these features may have been forged by the grandeur of nature itself. These are striking images: one can almost feel the rugged strength of the mountains and the bite of the sea wind on the face.

The exquisite close-ups of the heads of eagles are even more compelling — the intricate details of feather and eye are marvellous to contemplate.

At first reading, to borrow from the jargon of the computer age, "what you see is what you get" might sum up the value of the book. But I find that the images evoke a depth of feeling and awareness that increases with each subsequent perusal. This is a book to savour at leisure, or simply to dip into from time to time for spiritual refreshment.

- Reviewed by *Michael Williams*, 1006-606 Victoria Ave., Saskatoon, SK S7N 0Z1

RECENT OBSERVATIONS

Despite winter's continued grip on the land, birds still returned at about their normal dates. The last week of March and the first of April brought in many reports of hawks, mostly Red-tails and Northern Harriers, with the largest single day total of 100 Red-tails near Lumsden. There were also a sprinkling of Bald Eagles and Rough-legged Hawks, with 31 eagles in the Qu'Appelle Valley on 9 April and 11 Rough-legs near Regina on 19 April being the most notable numbers. The first Swainson's Hawk report was 21 April from the Regina area. There have been at least seven sightings of Short-eared Owls in late April. This increase in sightings was predicted from the amount of grain left in the fields and the subsequent rise in vole population. Sandhill Cranes were seen near Broderick on 13 April and subsequently in many places. A pair of Greater Scaup (Bob Luterbach) seen near Regina were well observed — this is probably an overlooked species. Gardiner Dam had eight species of waterfowl on 31 March, although 4 Tundra Swans (Frank Roy) and 2 Northern Pintail on 20 March were more surprising. Mountain Bluebirds were first reported 23 March. Geese, American Crows and gulls were noted in Saskatoon 20 March. The gulls were later identified as Ring-billed, Herring and California gulls. A second winter Iceland Gull (Roy John and many observers) was seen in Saskatoon during an SNS field trip on 5 April and stayed to 10 April. An adult Iceland (Thayer's) Gull was found near Regina on 21 April (Bob Luterbach). A group searching for the Saskatoon Iceland Gull on 9 April found a second winter Glaucous Gull (Guy Whapple and three observers) instead. A similar plumaged bird or the same one was seen on 12 April (Bob Luterbach). The last few days of March saw an influx of Tree Sparrows and Dark-eyed Juncos into Saskatoon and Regina and this was repeated on 20 April. The first Yellow-rumped Warblers were seen in Regina on 21 April and in Saskatoon on 23 April.

Manitoba had a wonderful influx of owls, with a peak of 57 Northern Hawk Owls on 15 March and 32 Great Grays on 2 March. There were numerous Snowy Owls present too. The Windygate hawk watch had a provincial high of 3671 Red-tails on 3 March, along with 143 Bald Eagles. Another provincial high was 8 Golden Eagles (23 March). After the blizzard they saw 1730 Red-tails (13 April) and 280 Sharp-shinned Hawks (19 April). Winnipeg has had an unprecedented five Red-shouldered Hawks this spring. Before the blizzard, on 4 April, there were Eastern Phoebe, Hermit Thrush and Yellow-rumped Warbler within the city of Winnipeg.

The first Richardson's Ground Squirrel was seen 23 March. On 20 March 11 Timber Wolves and two River Otters were watched in P.A. National Park. Another surprise was a Big Brown Bat flying in downtown Saskatoon on the 20th. Milbert's and Compton Tortoiseshells and Mourning Cloaks have appeared on schedule.

There were many opportunities to observe comet Hale-Bopp throughout March and April.

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